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APASHE

On creating a bass music-orchestra hybrid

SOUND PARTICLES

The makers of the world's first spatial synth speak

SIDECHAINING

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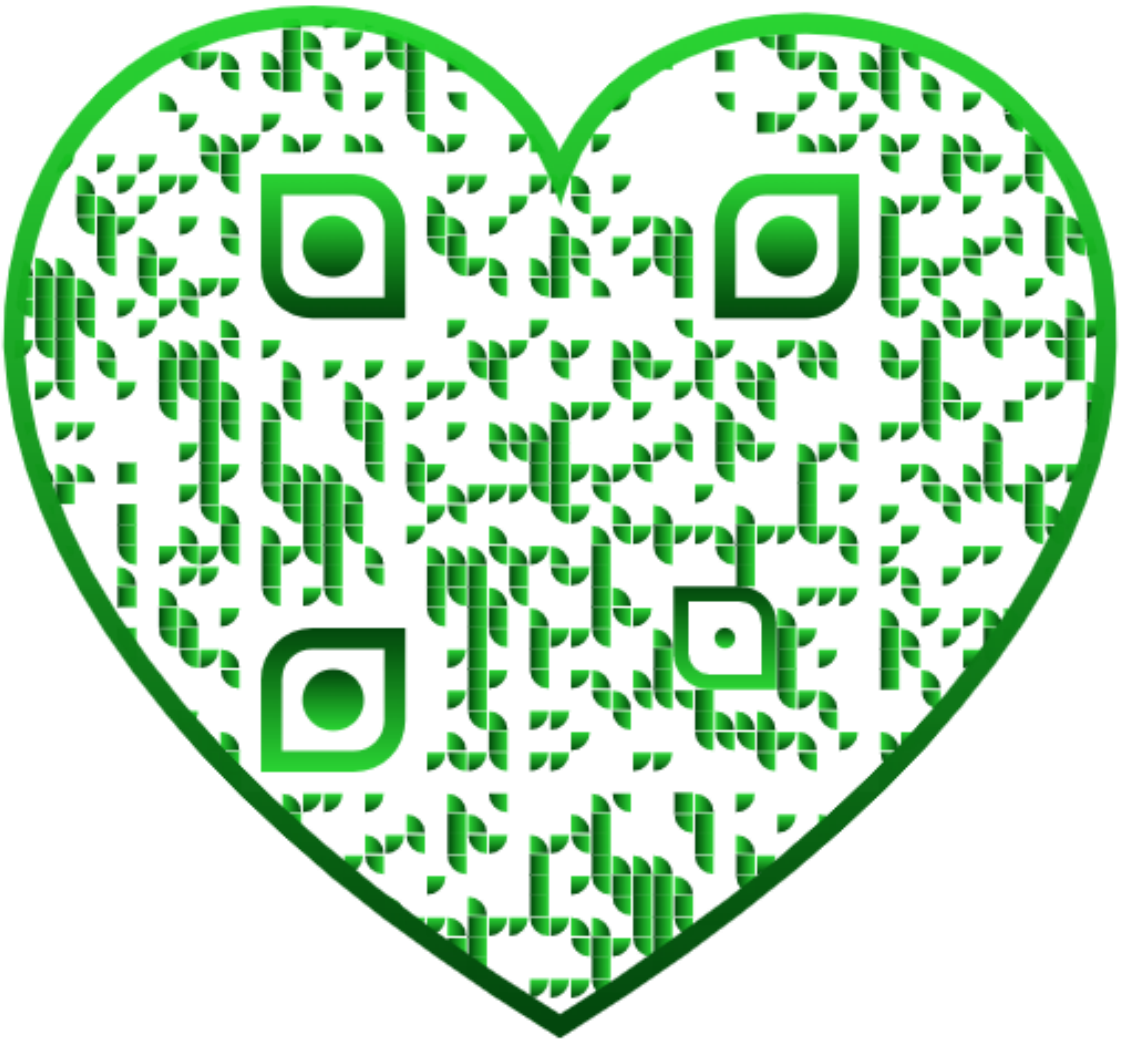

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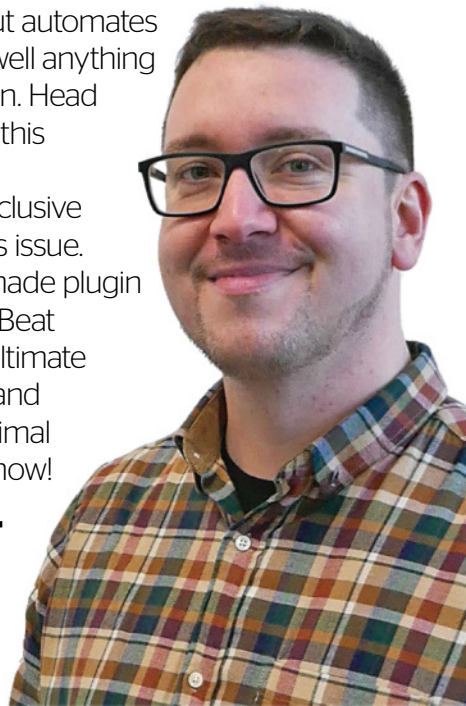
See page 81 to find out how to download this issue's exclusive content

welcome

Birthed in mid-'80s Detroit (with a little influence from Kraftwerk) and now a cornerstone of dance music, the pulsing techno formula has withstood the test of time – and subsequently splintered itself into countless sub-genres. This month, we've decided to give this pivotal electronic music standard some spotlight attention, by bringing you a ginormous guide to writing, producing and thinking like those OG innovators who created techno. We've got tutorials on every facet of the style, to help ground you in the roots of a genre that today might seem overwhelmingly tricky to pin down as it's been heavily subsumed into the electronic music landscape. To help you on your techno-trek, we've also rustled up some retro-flavoured techno samples to arm you for your four-on-the-floor endeavours.

Also this issue, we speak to Apashe; the genre-melding Belgian/Canadian musician has succesfully enhanced his bone-shaking bass music with the addition of a 61-piece orchestra for his upcoming album *Antagonist*. He explains to us the process of making the epic new LP and the disciplines required to combine genres (starting on p32). Elsewhere, we refresh your memory on sidechaining, the staple principle within music production that all but automates compression, limiting and, well anything else you choose to sidechain. Head over to p50 to brush up on this integral technique.

As always, we've got an exclusive software gift just for you this issue. This month it's a uniquely-made plugin tailor-made by Baby Audio. Beat Slammer is essentially the ultimate drum compression plugin, and boosts your beats with minimal fuss. Add it to your arsenal now!



Andy Price Editor
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ISSUE 327 NOVEMBER 2023

cm/contents

cm/expert guides

42__SYNTH MASTERCLASS
Dave Gale shows us how to hand-craft tape strings

46__MIX MASTERCLASS
Jon Musgrave details how to incorporate short delays

Interview

32__APASHE
Apashe explains how he has melded hard-hitting bass music with a 69-piece orchestra

Essentials

6__NEWS
10__INTERFACE
94__SUBSCRIBE
97__BACK ISSUES
98__NEXT MONTH

Reviews

60__UNIVERSAL AUDIO ELECTRA 88
62__MUSIK HACK MASTER PLAN
64__SOUND DUST PLANKTON DRUMMER
66__BLEASS VOICES
68__GFORCE SOFTWARE M-TRON PRO IV
70__AUDIO IMPERIA DOLCE
72__JMG SOUND BITPUNK
74__CHERRY AUDIO OCTAVE CAT
76__SOLID STATE LOGIC BLITZER
78__SOUNDWARE

50__CREATIVE SIDECHAINING
Learn how to make tracks pump harder with this classic feature on the art of sidechaining

cm/downloads

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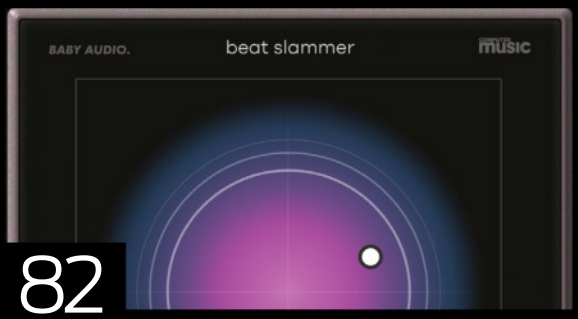

82

cm / free software

BABY AUDIO BEAT SLAMMER

How to use this month's exclusive free plugin, made in collaboration with Baby Audio

88

cm / free samples

TECHNO AND HORROR

This month we've got a pack of classic techno elements as well as some spooky horror and tension-evoking samples

93

cm / free videos

MASTERCLASSES

Follow along with our in-house experts as they guide you through their top tips for mixing and synthesis

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NEW RELEASES >COMMENT >INDUSTRY HAPPENINGS

Love, peace and Harmonia

The latest addition to Cherry Audio's ever-swelling arsenal, Harmonia cribs from wavetable synths of yesteryear...

> Cherry Audio has unveiled an all-new wavetable synth plugin – Harmonia has been inspired by the classic vector and wave sequencing synths of the '80s and '90s, building on these foundational techniques via a modern architecture that incorporates additive synthesis. The resulting sound, as the company describe it, is "lush, evolving and polyphonic".

Harmonia is equipped with two sample-based oscillators, each of which can generate up to eight pitches using waveforms in the plugin's library. These pitches, or harmonics, can then be tuned individually to create harmonically complex timbres. The volume of each of these harmonics can also be tweaked individually, adjusted collectively through a handy slider, or even modulated to produce evolving and organic textures, with a process Cherry Audio has named 'interpolated harmonic scanning'.

Cherry Audio says Harmonia's waveform library contains "hundreds of meticulously sampled waveforms sourced from various synthesisers, traditional instruments and voices,

as well as an array of quirky 'lo-fi' sounds", so there's tons of potential for new sound-building and tone-sculpting. You can also import your own samples into Harmonia that can be used as the basis for original waveforms.

The sound from Harmonia's dual oscillators passes through a stereo multimode filter and can be shaped with click-and-drag amp and filter envelopes before being processed by four onboard effects: distortion, modulation, echo and reverb. The plugin is outfitted with a fairly capable modulation matrix with 80 destinations and 19 sources, including four tempo-syncable LFOs with ten waveforms. The synth supports aftertouch and flexible MIDI mapping so there's heaps of scope for expressive performances.

Harmonia arrives with 350 presets, designed by a team of experienced sound designers and synthesists. These presets were overseen by veteran sound designer James Terris. An additional preset pack (dubbed 'The Euphonic Sonics Preset Pack') adds a further 100 presets to the mix. So, even if you're a little stumped by Harmonia's unique approach to sound design, you should be able to get going straight away. Beyond that, Harmonia also has 17 studio-quality effects such as distortion, chorus, phaser, echoes, reverbs and more, which are all fully modulatable through the matrix.

Harmonia is available now and the RRP is $69. The plugin is available in AU, VST, VST3, AAX, as well as standalone formats for Mac and Windows users.

www.cherryaudio.com

Red dawn

Focusrite has unveiled the fourth generation of its best-selling Scarlett range of audio interfaces. The 4th Gen lineup, made up of the Scarlett Solo, 2i2, and 4i4 has been bolstered with improved features, including new preamps and headphone amps. Audio circuitry in each of the 4th Gen interfaces has been re-engineered, with the addition of professional grade 192kHz, 24-bit converters from Focusrite's flagship RedNet range. There's also a new Auto Gain feature which sets incoming signals at the optimal levels while Air mode has been enhanced with a new DSP-driven 'Harmonic Drive' mode for console-like richness. Prices begin from £139.99 (Solo).

www.focusrite.com

App watch

We report on the latest developments in phone and tablet music making

The chips are down

It seems the chiptune aesthetic has never really gone away, and with the new SNESynth, Audiokit has proven that the charm and creativity of the bleepy, bloopy landscape is boundless. Using PWM synthesis and 2,500+ samples from actual console sound chips, SNESynth for iOS ($14) is as authentic as they come. A slick step sequencer allows for brisk track-building on-the-go while over 400 presets come fully loaded to get you started. You'll be scoring imaginary *Mario* levels and intense *Street Fighter* contests with ease.
www.audiokitpro.com

Perfect fusion

With its new distortion plugin, BLEASS harness wavetables to generate a salvo of crunchy, biting effects. BLEASS Fusion is divided into four pages: Saturation, Filter, Modulation and Sequencer wherein users can craft unique-sounding distortion tones, with 58 wavetables to affect timbre and shape. While the first two sections feature wavetable editing, pre-drive and multimode filters, the last two are angled towards dynamic movement. BLEASS Fusion is available now for both desktop and iOS (AUv3) at $9.99.
www.bleass.com

A heck of a URL...

A tasty new tube-emulated saturator has been released for iOS and desktop from the lengthily-named Woodman's Immaculate Maple Syrup Studio. WoodValvet features three tube stages each with their own drive control. Further refinement can be shaped by switching tube types, adjusting the stages to be in parallel or in series to craft different harmonics. There's some adept filtering to get the perfect tone. It's available now for $13.99 and you can find out more by visiting (inhale)...
www.woodmansimmaculatemaple syrupstudio.be

COMPUTER MUSIC 10 years back

Our monthly shake-of-the-head at our earlier selves' news choices...

In our sci-fi utopia of 2023, removing hum and crackle from audio and smoothing out frazzled recordings is something we take in our stride. Intelligent software from the likes of iZotope, Waves and Sonnox has made life far easier than it was back in 2013. In *Computer Music* issue 197, we devoted 20 pages to explaining how to handle the restoration of dodgy audio manually. We diagnosed

> We devoted 20 pages to handling the restoration of dodgy audio manually

the most common ailments that producers were likely to encounter, and guided readers through painstaking methods to rescue their soiled mixes.

Elsewhere, we pondered whether the splurge of odd new MIDI controllers (notably, ROLI's then freshly spawned Seaboard) would lead to a decline for the standard keyboard-based controller. "The keyboard in its current form exists more out of convenience and familiarity than out of logic or musical sense, so I don't see any reason for it to persist as an industry standard." So said Adam Place of nu desine, predicting a shift that still has yet to come to pass...

Little did we know that the subject of our 'Whats on your Hard Drive?' Q&A would go on to be one of the decade's most influential electronic titans. A fresh-faced Jon Hopkins detailed how he liked to interplay newer software with the ancient, running a virtual version of his 2001 Windows XP PC within his Mac.

There were no flies on our November 2013 issue

The 909 refined...

A 909 emulation with a difference, D16 Group's Drumazon 2 builds on the first instalment of its Roland Rhythm Composer-based drum machines; with a modern interface, it speeds up the process of accessing those accurately-modelled retro sounds. Each drum sound has an independent channel strip which can be routed to two sends that feature eight effects before reaching a master section with a three-band compressor and a limiter. Drumazon 2 can be controlled with a MIDI keyboard to more easily capture your performances. MIDI out lets you control other hardware and software instruments via the internal sequencer, and you can also export your internal sequences to MIDI. As D16 state: "Its effect chains help you dial in your sound, its improved workflow puts you in the driving seat and its sequencer presets and randomizer offer inspiration you never expected." Out now for £99/$119/€119.

www.d16.pl

Ins & outs

MAKING IT SNAPPY
With a refreshingly minimalist and vintage-inspired design, the standalone sampler Snapbeat has been crafted by inventor Hiro Akihabara. Via its 3.5mm audio input, the device can be used to sample in real-time. The first batch are sold out but more are coming...

REST IN PEACE, VACCINE
We were extremely sad to hear of the death of Christine Clements – aka dubstep producer Vaccine – last month at the age of 43. A key figure from the heyday of dubstep, Clements was also the founder of Vaccine Records. Our thoughts are with her family and friends.

MS-DOS RIDES AGAIN
Having crafted records for numerous classic games consoles, Remute now turns to pre-Windows OS MS-DOS. The album *Drive Into The Future* will generate in real-time within the antiquated text-based system, or via DOSbox on CD-ROM. So dust off that old PC!

A LOAD OF PONY, SAYS TONY
"They're making bullshit records with loops," vented David Bowie's most famed producer, Tony Visconti when asked which modern producers he admired. In an interview with *Uncut*, Visconti also said that aspiring producers should 'break the rules' more.

THE EAR CANDY-CRAFTER
Baby Audio and megastar producer and YouTuber Andrew Huang collaborated on Transit – an FX plugin that is designed to make transitions, drops, effects sweeps, risers and more. Not to be outdone, our own collab with Baby Audio, Beat Slammer, is free this issue!

PARP-OOSHKA
A new interview has revealed just how far Kate Bush would go to push the boundaries of sampling."Somebody told me she sampled a fart on the Fairlight," said collaborator Dónal Lunny in an interview with *Uncut*. "She would happily play tunes on it"

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www.fabfilter.com

Sound Particles: The sky is not the limit...

Recently releasing the world's first spatial audio synthesiser – SkyDust 3D – Sound Particles are catering for both Hollywood's soundtracking juggernauts and creative musicians looking to get more explorative with spatial sound design...

Sound Particles CEO
Nuno Fonseca

cm: Hi Nuno, can you give our readers a short overview of SkyDust 3D, what it brings to the table for spatial audio-composers?
Nuno Fonseca: "SkyDust 3D is a modern and powerful synth, but what makes it unique is the fact that it has a 3D sound engine fully integrated inside the synth. This means that anything (MIDI, EGs, LFOs, Sequencer, etc) can control 3D panning. For instance, imagine that you want a note to start at the back, attacks to the centre, sustains on the side, and releases above your head. Or having eight oscillators per-note, where each oscillator plays at a random position around you (1 note = 8 'objects' in space). Or using an LFO to make sound jump around you. Or using the modulation wheel to control the elevation of sounds. Or using the Sequencer with 3D panners to create 3D arpeggios. Or everything together. With SkyDust 3D, you play a note and you get instant spatial audio."

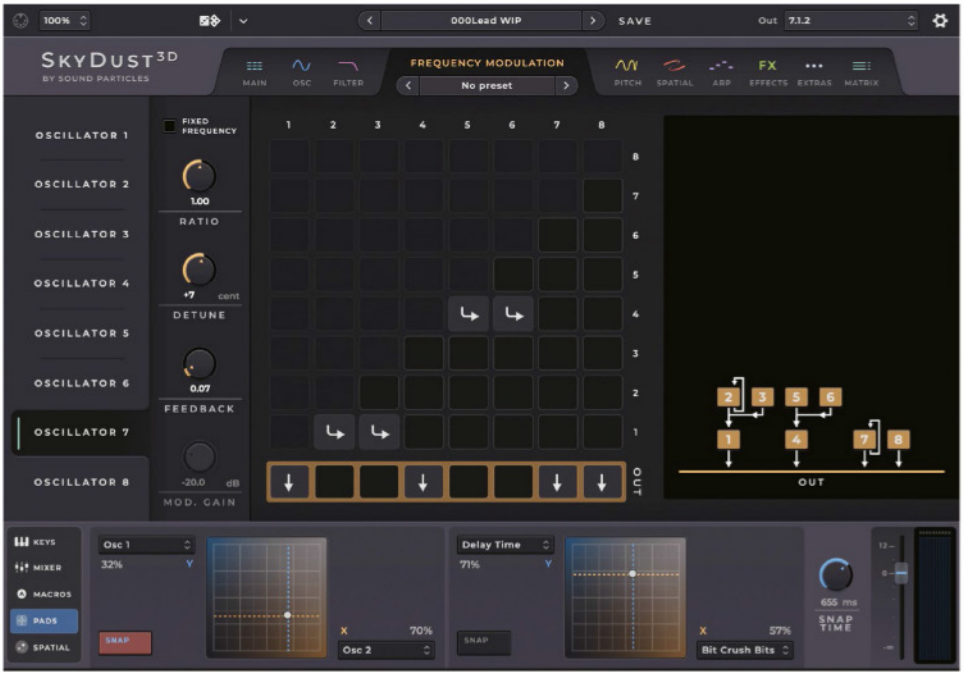
cm: Prior to SkyDust 3D, how difficult was the process of mixing soft synths within the spatial domain?
"When we released SkyDust 3D, I saw a comment somewhere saying 'Any synth with a 3D panner and automation can do the same as SkyDust 3D'. Well, good luck! Imagine that you use a 3D panner to control the audio output of a regular stereo synth. Yes, you can move and animate its sound around. But the problem is that you are moving *everything* around. You cannot leave a note in one place and a new note in another. As soon as you move the panner to the new position, the sound of the old notes (and their releases) also moves. If you want each note to have its own panning, you need to duplicate the track multiple times, and start removing notes in an alternate way. With SkyDust, each oscillator will have its own panning. I can play a note and have each one of the eight oscillators going to a different position, creating a very interesting immersive sound using a simple note. Can we do that with automation and regular synths? Well, you need to create multiple

Sound Particles now has a team of 25, including five PhD students

duplicates of each track, go to each synth instance and solo one oscillator in each track, and then pan each track differently. And it may work, although it's a crazy workflow if you're using a single note at a time. Playing a 3-note chord that generated 24 panning positions (where any new notes will have their own positions), would not be possible, unless you create eight tracks per note of your 'track'. No soft or hard synth has ever given so much liberty to the spatial creation process. In spatial audio, you want to try things quickly. If you need to spend hours on each test (and in a limited way), you'll give up fast and limit your creativity. With SkyDust, you can quickly switch between different spatial sub-presets, or even ask for random spatial settings."

cm: What do users need to monitor and mix effectively with SkyDust 3D? Does it require a pricey set-up, or can people use binaural headphones?

"Actually, we would say the best way to work with SkyDust 3D is to use multiple speakers. It could range from a full Dolby Atmos studio (7.1.2, 9.1.6, etc) to a smaller setup with four speakers (for instance, adding an old pair of speakers on the back to complement your main stereo). Speakers always beat headphones, either for stereo or spatial. Nonetheless, sometimes you only have a stereo pair of speakers, or only a pair of headphones. In that case, SkyDust 3D is able to give you 3D sound over headphones. You can either use our standard HRTF dataset, or you can try multiple binaural datasets that are included in SkyDust, so you can select the best one for your ears (each person has different ears, and that influences a lot of binaural sound). If, by any chance, you have your own SOFA (Spatially-Oriented Format for Acoustics) file, with your personalised HRTF dataset, you can also use it with the synth."



SkyDust 3D's oscillators can be moved around the spatial field individually

cm: What are some of your personal favourite features of SkyDust 3D, or things you can do with it that might not be immediately apparent?

"I love using SkyDust's sequencer: the ability to have a keyboard for each step makes it much more intuitive than thinking mentally about semitone offsets. And these keyboards also allow you to create polyphonic sequences. But then, when you add a 3D panner to each step and you start creating 3D arpeggios, that's where the magic begins with arpeggio notes jumping around you in 3D. Nonetheless, there is something great about SkyDust 3D which is not immediately apparent. When you think about a 3D synth, you imagine sounds moving around. But sometimes, the best immersive results come from having static sounds, and that is the main reason for us to have eight oscillators, each one with its own 3D position. This means that if I play a note, I will have eight different sounds around me; if I play three notes, I will have 24 sounds around me. They don't even need to move. It's like being in the middle of an orchestra, surrounded by musicians; a living musical immersive soundscape."

cm: Are you seeing SkyDust 3D as more of a soundtracking/composing tool, or do you hope that DIY producers who are

looking to get into spatial audio production will pick it up too?
"We want everyone to get onboard. Yes, composers may adopt it first, but we created SkyDust 3D for everyone and for all music genres. Are you a contemporary musician with a 64-speaker setup with Higher Order Ambisonics? Great. Are you a film composer with a Dolby Atmos studio? Fantastic. Are you a hip-hop producer with stereo speakers/headphones? No problem. For instance, imagine a live concert. Why not add a second pair of speakers on the back of your audience, and allow your audience to listen to your synth sounds moving around? But, even if you only work in stereo, SkyDust will still give you fantastic space-related tools that you can use. For instance, imagine that you want your sound to start at the centre as mono, and increase its width during the attack, and then collapse to the left speaker during release. Can regular stereo synths do that? [Not the last time we checked, *Ed*]."

"With SkyDust 3D, when you play a note you'll get instant spatial audio"

cm: Do you think that 3D Audio will become a new norm, and how will that affect creatives who are used to stereo? Is SkyDust the first of a new standard of software instrument design?
"Of course, I have a biased opinion, but for me, the future is spatial audio. I remember when I was 15 and I went to see an orchestra for the first time. As soon as the strings started to play, I was hooked for life because no stereo recording could ever come close to that feeling of space and immersion of a live orchestra playing in a great acoustic space. And that is the feeling that I want others to experience (a seed that stayed for life). Then, during most of my life, I felt a little unhappy, because the only musicians wanting to explore space were people from contemporary music. 'Why don't we get other musicians to play and think about space?'. But now, as more and more musicians start to listen to spatial music, with multiple genres, people start to get hooked. The problem is that when you think about creating spatial music, you immediately think about using a panner. And who uses panners? The mixing engineers. So, people have associated spatial music as something that should be done by mixers. We have a different view: spatial music should start with musicians and producers. We should think about space the same way that we think about melody, harmony, rhythm, timbre, or orchestration. With the release of SkyDust 3D, we wanted musicians to have a music instrument that can take you directly into that world."

The arpeggiator and sequencer allows users to craft space-spanning movement

SkyDust 3D comes packed with tailor-made presets, so anyone can dive straight in!

cm: Can you talk us through the company's history up until now?
"16 years ago, I realised that the most interesting visual effects I was seeing in movies used particle systems, a computer-graphics technique where you create thousands of small points that together create fire, explosions, desert storms, fairy dust, etc. I thought 'Wouldn't it be nice to do the same but with sound?', creating thousands of small sounds around you that together would create fantastic soundscapes. But it was only one idea, like so many that we have in life. Then, in 2012, I finished my PhD on a different topic (singing voice resynthesis, following my work on EastWest's text-to-sing features), and since no one was using particle systems for sound, I decided to start creating my own software for that, and Sound Particles was begun. In 2014, I was going to Los Angeles for the AES convention, but before travelling, I decided to send emails to five or six people in the movie industry, saying that I was working on this crazy technology, which would be great for epic movies, and I would be in the neighbourhood within two weeks. The first reply came from Skywalker Sound inviting me to go to the Ranch to give a presentation. Within six months, I gave presentations at Warner Bros, Universal, Paramount and many other studios. The company was finally created in 2016, and today we have a team of 25 people (including five PhDs), whose software is used in major productions including *Stranger Things*, *Star Wars* and *Dune* and by some of the best musicians and recording engineers in the world."

For more info and to download SkyDust 3D, head to www.soundparticles.com

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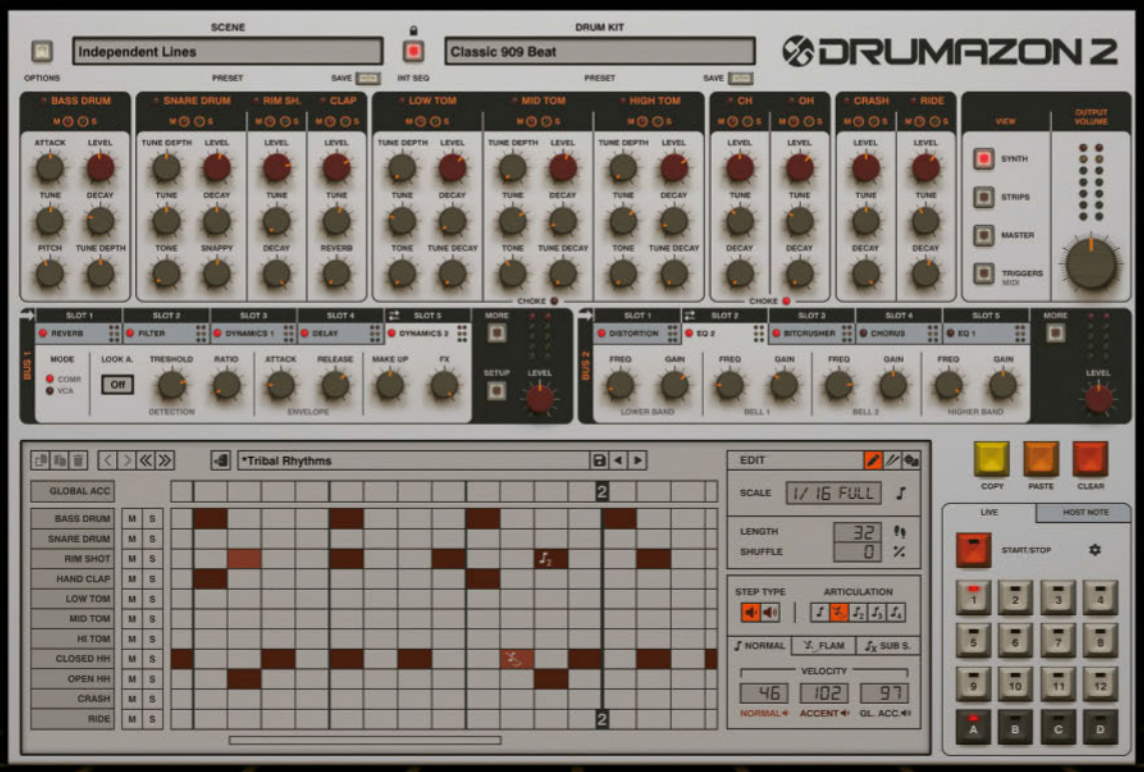

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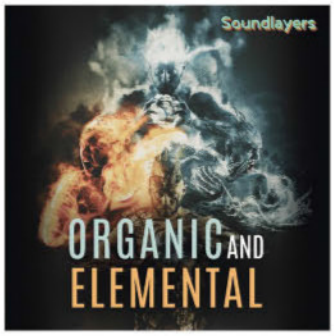

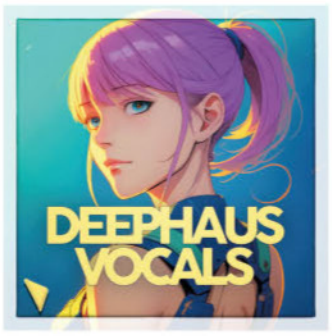

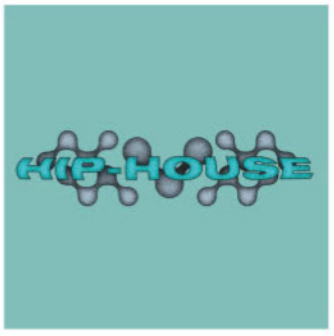

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TECHNO

The lifeblood of electronic music and a genre that's still omnipresent today, the intense energy of techno holds a hypnotic allure. Over the next few pages, we dig deep into the workings of this essential genre, and show you how to craft club-ready future techno classics

Words: Sara Simms

> From the foundational DIY sounds of its Detroit-based origin story to today's slickly produced floorfillers, techno is one of the most pivotal genres within the electronic music sphere, defined by stable four-to-the-floor rhythms, squealing leads and throbbing, impactful bass. Within the following pages we're going to explore modern techno and highlight how you can get your footing in this most colorful of genres. To grasp techno's centrality to the modern scene, it's important to get a little context on the genre's birth.

The genre was invented by The Belleville Three – Juan Atkins, Derrick May and Kevin Saunderson, and '80s Detroit culture had a profound influence on these three innovators, whose early compositions may have been influenced by a fascination with futuristic ideas and machines. Juan Atkins formed a group called Cybotron and their first single *Alleys of Your Mind* sold 15,000 copies on the independent Deep Space label in 1981. Shortly after, Atkins began a solo project under the name Model 500. In 1985, Model 500 released *No UFOs* on Juan's own label Metroplex. It's a record considered by many to be the first techno production.

The technology and hardware that was becoming available in the early '80s influenced the burgeoning sound of techno. New drum machines and synthesisers were produced that allowed music producers and hobbyists to create music in their bedrooms. This hardware-originating sound has remained a prominent part of the genre, and has become embedded into its fabric.

Produced from 1980 to 1983, the Roland TR-808 is one of the most influential drum machines of all time. It allowed users to easily program their own rhythms using the built-in 16-step sequencer and used analogue synthesis to produce drum sounds, as opposed to using pre-recorded samples.

The TR-808 is perhaps best known for its contributions to hip-hop and electro, however it was also harnessed by the early techno pioneers. Roland then introduced the TR-909 Rhythm Composer, commonly known as the 909 in 1983. It was the first of the Roland drum machines to use samples for some sounds, and the first that used MIDI functionality, allowing it to synchronise with other devices.

OK, that's all the context you need. Now let's get started and dive into the practices and techniques employed by today's techno titans...

Producer, label owner – and writer of this guide – Sara Simms

Sara Simms opens for Detroit pioneer Carl Craig at Toronto's Nømad

Build your techno toolkit

The pulsing momentum of techno is built upon some essential core components, here we'll detail what you need, and how to use it...

Techno has branched out far from its roots in Detroit and has evolved into a wide array of sounds, including big room techno, main stage techno, soulful techno, purist techno, acid techno and lots more. One consistent element in all of these styles is that the kick is often the main focus of the track. With that in mind, it's best to start production with the kick drum and build the rest of your track around the kick. To learn what type of kick sound is appropriate to use, use a reference track in the same style that you'd like to create. This will assist you to select or create an appropriate kick sound. You may want to choose the key of your track first and choose a kick that's in the same key. There are many good quality sample packs available to use as a starting point. To really carve your own niche, why not spend half a day crafting kick drums so that there's a custom-made library available for your personal use.

Choose a kick that has a strong transient that will cut through the mix. If the kick has a solid body but lacks a sharp transient, layer the kick drum with the transient from another kick. You could also try layering the kick drum with another sound, like a tom. To add some character, a third layer could be added to give the kick a click in the higher end. Adjust the levels of all three kick layers to have them sit in the mix together. Shape each kick drum using EQ to make them blend together. You can try this layering method instead of compressing the kick. All of the kick layers can be grouped together, and processed as one kick. Use a 'notes to frequency' chart to find the fundamental frequency using the key of your kick drum. Place an EQ such as FabFilter's Pro-Q 3 on the main kick drum (or kick group) and boost the fundamental frequency of the kick between 1 and 3dB, and use dynamic EQ if your EQ offers this feature. Try a shelf EQ to roll off the frequencies below 30Hz to give the slope a more natural feel.

A popular sound is the techno rumble, which can be created from the kick. One of the best

Getting your kick layers to play nicely together is key

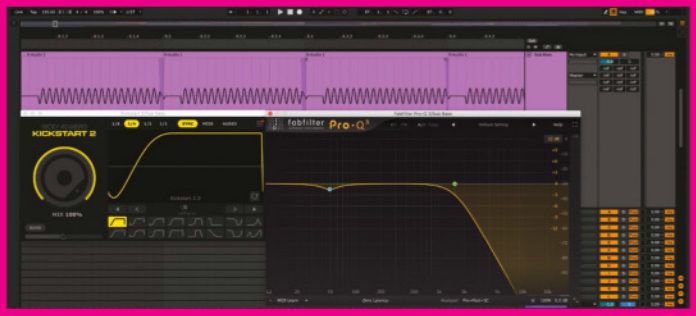
Whip up a kick rumble with Kush Audio REDDI

ways to create this rumble is by using a convolution reverb. Create an auxiliary/return track and put a convolution reverb on it. Next add a filter like FabFilter Simplon and apply a high-cut filter to cut off all the frequencies above 200Hz. Shape this sound further by adding a DI like Kush Audio REDDI. Send the grouped kick drum to this return track and mix in the rumble from the return track to your kick. You'll need to determine the level that the kick should play at. Use your reference track as a guide for the kick drum level and don't try to guess where a kick sits in the mix. In general, a kick can sit around -5 or -6dB.

In techno, percussion tends to be pretty minimal. For hi-hats, it's recommended that you use the classic 909 closed and open hi-hats. You can use Battery, or find samples online. A good choice is D16 Group's Drumazon – a recreation of Roland's 909. It's fun to use and has a swing feature that suits techno grooves.

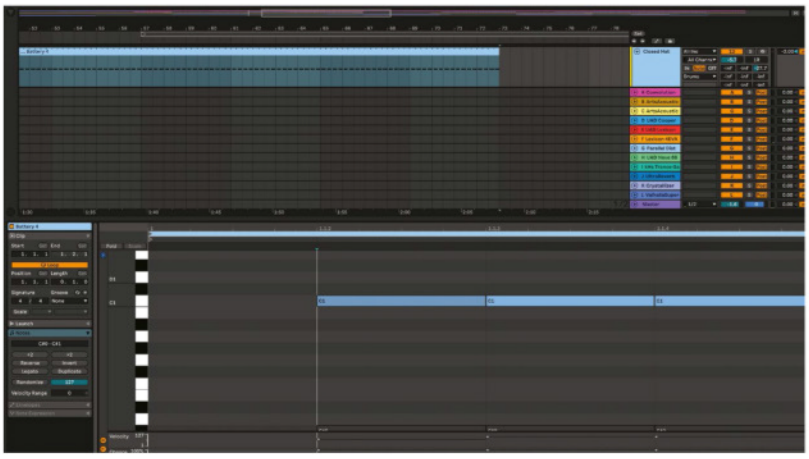
Start with the closed hi-hat and program a 1/16 note rhythm. Leave the first 1/16 note off, as this is where the kick drum plays. If you're using a sampler like Battery, try adjusting the length of the sample and listening to what works best. To add variation to the pattern, set the velocity of each hi-hat to a different level. Use a transient designer plugin like iZotope Neutron to enhance the transient of the hi-hat and make it stand out in the mix. Try increasing the attack and cutting sustain to create dynamics. Make the hi-hat sound wider using an imager (the one in Ozone 10 works great). Now, put a delay plugin on the track, like Soundtoys' Echoboy to add a subtle delay. To give the hi-hat more character, try using a distortion/gain plugin like Kush Audio's Omega 458a and turning up the gain. This type of processing gives the 909 hi-hat an analogue-type sound with more body.

Open hi-hats are programmed on the off beats in a 16th-note pattern. You may want to adjust the decay of the open hi-hat in a sampler, depending on how open you want the hi-hat to sound. Use a few of the same processes that were used on the closed hi-hat, like using a transient designer to bring out the attack of the sound. Add character using a vintage distortion (we used Kush Audio Omega TWK) until it sits nicely in the mix. Add in additional percussion such as a snare or clap, and if you wish, a shaker or toms. You've now got the bones of a banger.

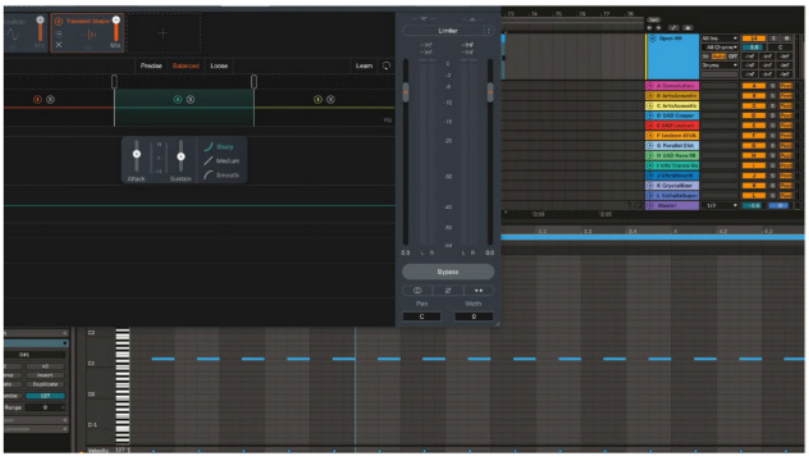


Sub bass

Modern techno typically deploys sub bass, which sits beneath the kick drum. To create the sub bass, use a synthesiser, such as Serum. Turn the oscillators off and use only the Sub. Set the waveform shape to Sine, and the Octave to -1. In the key of your song, record the root note on the offbeat, so it plays after the kick drum. The kick and sub bass should make an 'oompa'-type rhythmic pattern when played together. Bounce the Sub Bass track to audio and use the fade tool to shape the envelope of the audio by adjusting the fade on the sub bass audio file. Use a plugin like Kickstart 2 to sidechain the sub bass to the kick drum, so that the beginning of the sub bass is slightly ducked. To ensure that the kick and sub bass work well together, you can use EQ to cut the fundamental frequency that was boosted in the kick out of the sub-bass and use a low-shelf EQ in order to roll off frequencies below 30Hz.



Start your techno rhythms with closed hats



Open hats go on off-beats, with strong attack often being a characteristic feature

Ben Klock has long been at the front and centre of the techno scene in Berlin

Erik Valestrand/Redferns

Developing your techno track

Techno productions can draw listeners in by including dynamic changes and creating a particular sonic environment. On an aux/return track, you can use your favourite reverb to set the tone for the sound. A few good reverb choices are Lexicon 224, FabFilter Pro-R or KSHMR Reverb. With techno that's made for mid-sized clubs, try a small hall and for big room techno, use a large hall, like a warehouse or cathedral. Send the hi-hats, shaker, claps and other percussion to the reverb via the sends in your DAW.

Modern techno often includes a rolling bassline. To create the sound, load up your favourite bass synth, like Serum or Sylenth1. Saw or square waves with a fast attack or a fast filter envelope work well. Program a simple MIDI bassline in a 16th-note pattern and leave the first note of every beat as a rest to prevent it from clashing with the kick. To make the bassline stand out, try adding a bitcrusher. Rolling bass only needs to be audible in the midrange and an EQ or filter can be used to carve away the low end and top end. To ensure the rolling bass ducks out of the way of the kick, side chain it to the kick drum or use a volume ducker like Kickstart 2 for the sidechain.

The next part of creating a techno track is to find some inspiration to create the main melodic line. In techno, the melody is usually quite minimal. To draw listeners in, a catchy synth riff will work well, even if it's just one or two notes. The type of sound you use is entirely up to you and your vision for the track.

If you're creating a track that's more minimal, perhaps like the Ben Klock and Marcel Dettmann-style, you may want to use an analogue synth and record a melodic line into your DAW. You can listen to the recording, and choose the best part to loop. If your aim is to create Detroit-style techno, spend some time designing a good chord patch in your synth so you have an inspiring and authentic sounding patch to start with. Draw in the chord progression on your own if you're musical, or you can use a chord pack or plugin (like Captain Chords Epic) that will help you to create a simple chord progression.

Lastly, if you'd like to create rave-style techno or modern big room techno, you'll need to craft a lead patch in your favourite synth or use a preset from a sample pack. To generate an idea quickly, you can use a plugin that will generate a MIDI pattern and send the MIDI output to

Sidechain perfection for your rolling bass with KickStart 2

another synth with the sound you've chosen. This is a good trick to quickly create the main idea for the track. There are many MIDI-generating plugins out there; try a quick Google search and choose the best option for you.

Many classic and new techno tracks include acid lines, or are focused around an acid bassline that's modulated with automations. An acid bassline can be used in addition to the rolling bass line as long as space is created for it in the mix. It can also be used as the main melodic line in your track. The acid sound was originally created on the Roland TB-303 – the legendary bass synthesiser that was first released in 1981. Designed to simulate bass guitars, the 303 was a commercial failure and was discontinued in 1984. DJ Pierre's early acid

The next part of making a techno track is finding inspiration to create the main melody

house group Phuture released the *Acid Tracks* EP in 1987, essentially inventing acid house. The 303 sound hasn't gone out of style since, and the 303 sound is still a staple in many contemporary techno tracks.

Nowadays there are many good recreations of the TB-303, and one of the most well-known is Roland's own TB-303 plugin. With a little programming know-how, it's relatively easy to create a simple acid line that can be used as an element or the leading line of your track. The 303 will sound best in a mix with additional processing, like distortion or saturation on top. FabFilter Saturn 2 works well for this type of processing, or for a more extreme sound, Universal Audio Raw Distortion, or Brainworx the bx_blackdist2, which are both plugin versions of the Pro Co Rat distortion pedal. To make the acid sound more interesting and keep it changing throughout the track, you'll need to automate parameters like the Cutoff Frequency, Resonance, and Envelope Modulation.

Once the main synth line has been created, you may find it needs a supporting line. If you've chosen a big lead sound for the main lead, try pairing it with a synth stab, a higher pitched arpeggiated synth line, or a plucked synth. A simple trick is to automate the pitch on a plucked sound during a transition. You can achieve this using the pitch transpose in your DAW, or zplane's Elastique Pitch. A sustained pad sound can be added and used during the buildup or breakdown of the track.

Processing audio

Sound design is a big component of techno and to create truly original sounds, you'll need to spend time processing audio. Once you have all the main elements of a track (drums, bass, synths, etc) export them as .wav files and open them in a new session in your DAW. This will allow you to create experimental sounds that require lots of plugins and heavy processing to avoid overworking your computer's CPU. Try adding effects one after the other and once you've created a sound you like, bounce the tracks to audio. When you commit to a sound, this helps you to move the track forward and stop endlessly tweaking. Though there are countless effect plugins on the market, some good ones to try include: Cableguys ShaperBox 3, Output Portal, FabFilter Saturn 2, Soundtoys Crystallizer, Valhalla Supermassive, Native Instruments Guitar Rig, Polyverse Manipulator or Supermodal, effect plugins by Unfiltered Audio and GoodHertz.

Where would techno be without Roland's TB-303?

Pablo Gallardo Sanchez/Redferns

Deborah De Luca perfoms on stage at Medusa Festival

Techno effects and arrangement

Lastly, you'll need to add effects to the track. Effects sound more natural when they're made from existing parts in the track. Create return/auxiliary tracks with effects processing plugins, and send your percussive parts to these tracks. The results can be recorded to new tracks, and processed with filters, delays and reverbs.

Once all of the main parts of your track have been created, begin arranging. The best way to learn to arrange is by studying a reference track in the same style. Some techno tracks are built with more of a loop-based approach, and rely less on a traditional song structure. Some modern techno, for example tracks by producers such as Eli Brown, Space 92 and Deborah De Luca, incorporate more melodic elements and defined arrangement structures.

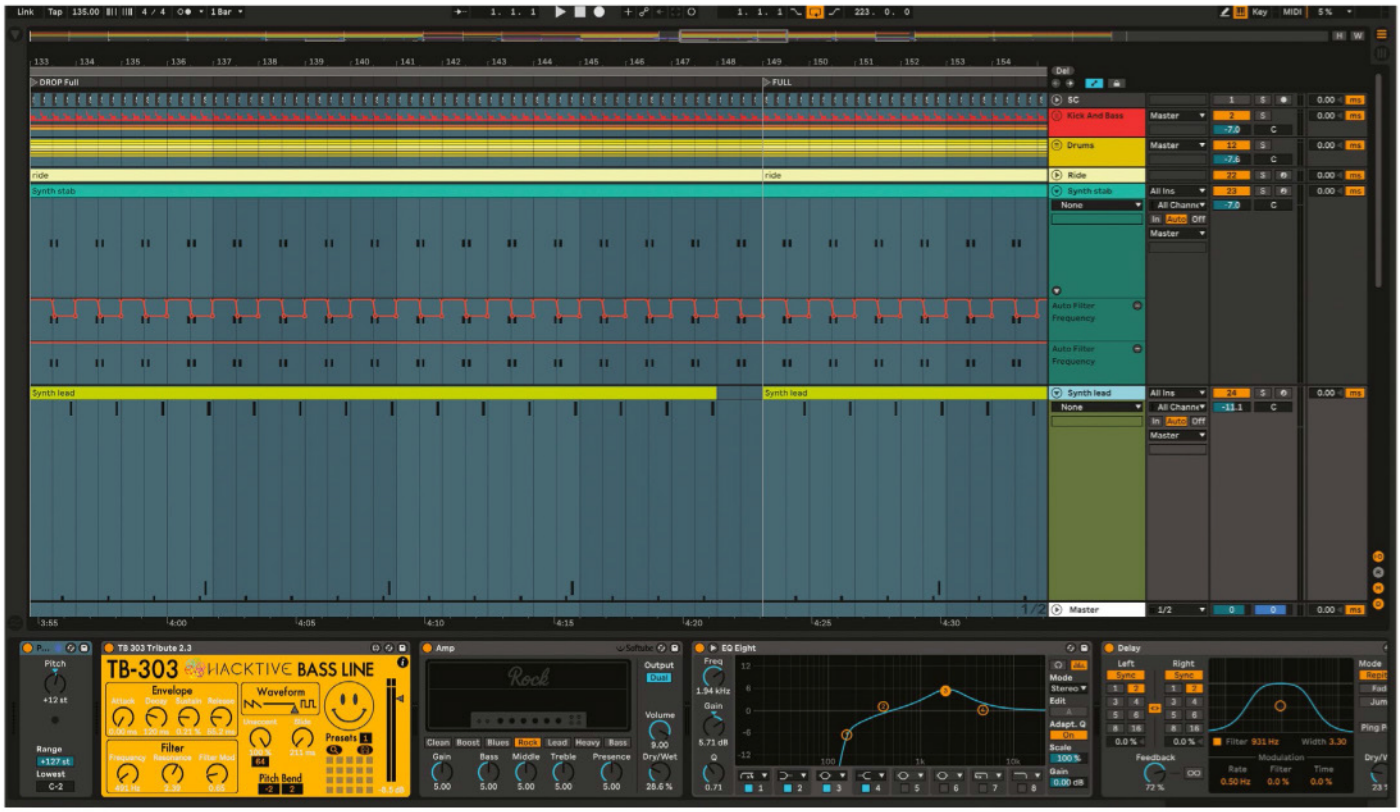
Generally in techno something new is introduced into the track every 16 bars, or an element is removed. Techno arrangements use dynamic changes to hold the listener's attention. A typical track arrangement could look like this:

- Intro
- Construction
- Break
- Full beat
- Break
- Build up
- Drop
- Break
- Build up
- Drop
- Deconstruction
- Outro

Before you begin, ask yourself if your loop is interesting enough in terms of percussive grooves, character, melodies and harmonic elements. Original mixes and extended versions of tracks will each have a different type of arrangement. Once you've created a strong eight-bar loop, you can turn it into a full track by sculpting the different parts. If you're new to arranging, it's helpful to create markers in your DAW to name each one of the arrangement sections, or create an additional MIDI track with the name of each part.

One of the main goals in an arrangement is to create dynamic contrast between sections. The intro of a techno track can be the kick, as well as atmospheric and percussive elements, and generally no bass. The construction part of the track reveals the 'story' of the track and sets the tone and feel. It achieves this by introducing the elements of tracks, musical ideas and sounds. In the construction section, hi-hats, percussion, bass and melodies can be added. The breakdown section of a track serves to introduce a dynamic change before the full beat or drop and softer or more melodic elements are introduced. The build up normally follows a breakdown part, and only works in contrast to the drop. Its main purpose is to build up the tension and prepare listeners by creating anticipation for the drop. A high level of anticipation is built, which makes listeners aware that something big is about to happen.

When writing your track, one way to begin is by starting with the drop. This is the main part in the song that people will dance to. There are different types of drops that can be used, depending on the melodic and percussive elements. In the most common style of drop, all of the parts play at the same time. The main point of this drop is to create contrast with the



The ubiquitous drop should be planned from the off

There are now a range of DIY mastering plugins to choose from

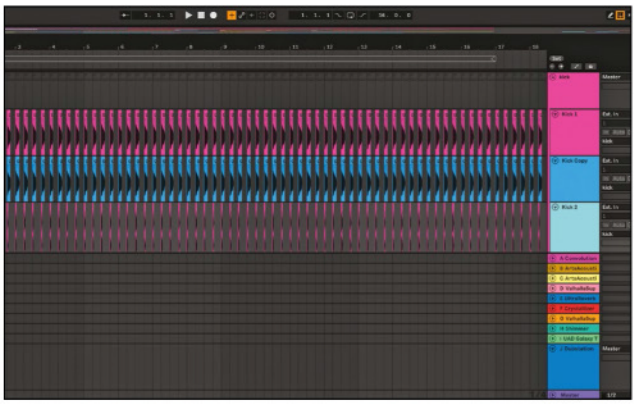
breakdown and buildup. If there is a complex melody, the first drop could play without it, and the melody could be included in the second drop. A minimal drop includes mainly drums and bass, and has to be in contrast to the buildup. The minimal drop is good for drums and a bassline that work well together without additional elements. In the deconstruction section of a track, elements are removed as the track begins to wind down as it moves towards the outro. The outro section is usually only percussion, and sometimes includes a bassline. The main function of an outro is to allow a DJ to mix out of the track smoothly.

It's definitely wise to use automation to create movement and change in the track elements. For synths, automate the filter cutoff, a send to a reverb, and sustain and decay automation. Try tricks like sending the synth to an aux/bus with ping-pong delay, and automate the send before a transition. Dada Life's Endless Smile is a recommended plugin for transitions, delay and reverb. Use it on a synth, and increase the intensity during a buildup, and then make it more dry towards the drop. Try adding snare rolls and reverse claps during transitions.

Finish the track by mixing and mastering it. To start any mix right, begin by leveling your tracks so they all play at the right volume. Use EQ to clean up sounds and remove problematic frequencies. Add dynamic processing and use references for your mix and master to help ensure that your track will fit into your desired sub-genre of techno. There are a lot of advanced tools like Neutron 4's Mix Assistant and Ozone 10 Master Assistant that can be helpful in the mixing and mastering processes. Once your track is completed, check its mono compatibility and test it out on as many systems as possible. When you have a demo you're proud of, it's time to send it out to labels and DJs. Best of luck taking your techno track to the next level.

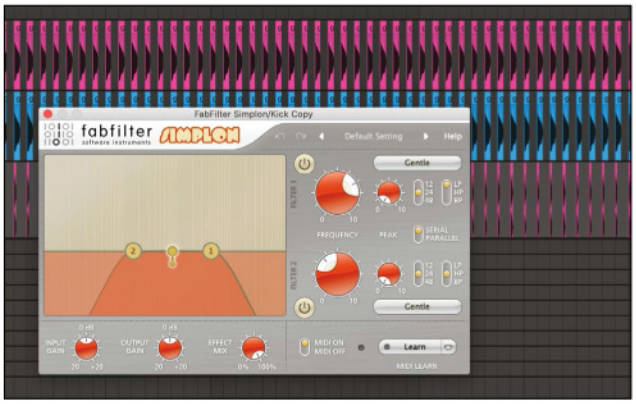
Building percussive layers

> Step by step 1. Building percussive layers and delayed kicks

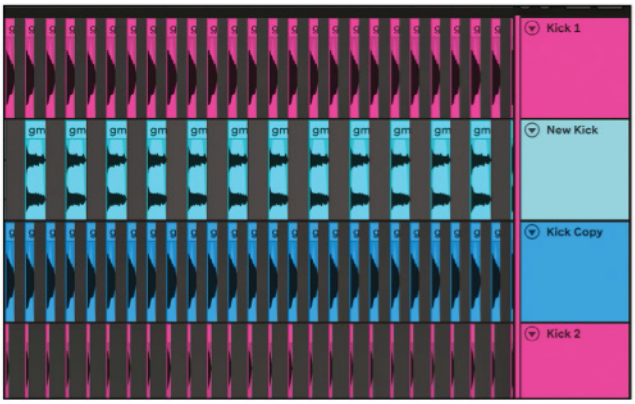


1 > Create a percussive layer or delayed kick to add a unique groove to your track. Create a new audio track and copy your kick drum to this track.

2 > Add a delay plugin, like Waves H-Delay to the track. Set the delay to 1/16 and adjust the Dry/Wet to taste.



3 > Add an EQ or filter before or after the delay to shape the sound. Use a filter like Simplon and use low and high-pass filters to remove the low and high frequencies.



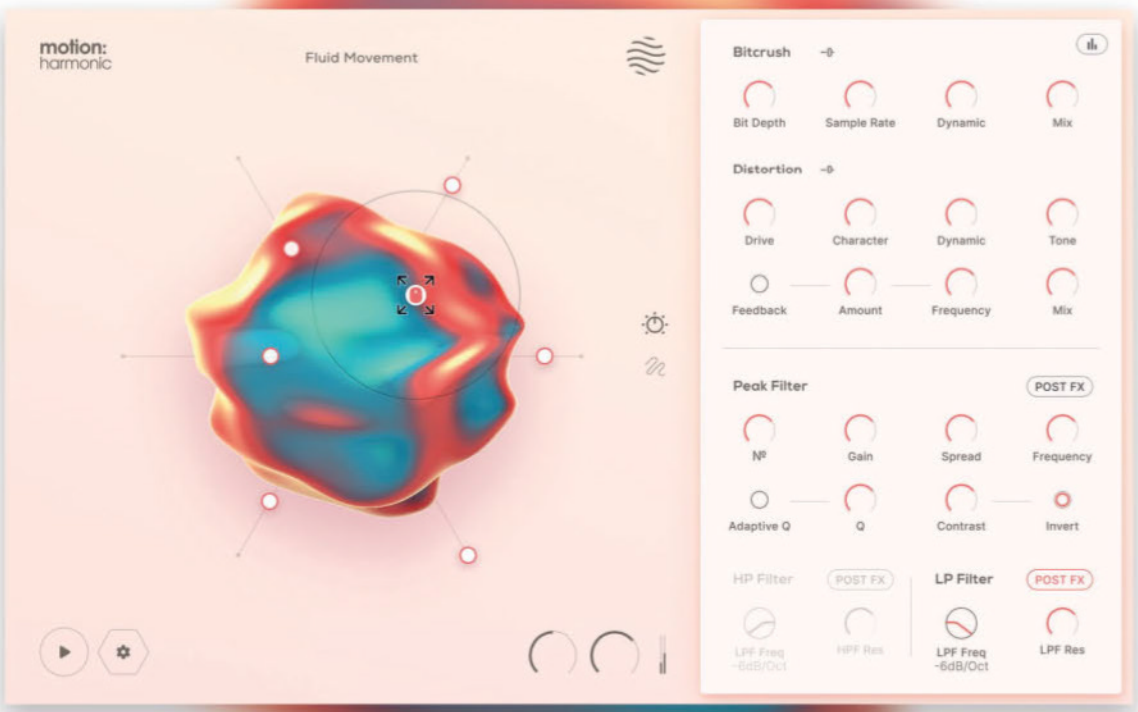
4 > Alternatively, instead of having the kick play on every beat, try adding a new kick on every second beat. Create a new audio track and program a kick drum sample on beats two and four.

5 > Add a delay plugin, like Soundtoys Echoboy, or Waves H Delay with an ⅛ Triplet delay. Try moving the kick placement in the DAW to create a more abstract rhythm. Lastly, shape the sound with EQ or a filter to remove the high and low end.

6 > In order to get more creative, you could send this percussive layer to a bus/aux send with an effect plugin such as Cableguys ShaperBox.

Excite Audio.

motion: harmonic



Motion: Harmonic opens up new frontiers in distortion, filtering and bit-crushing, placing you at the centre of a dynamic and responsive sound-shaping experience.

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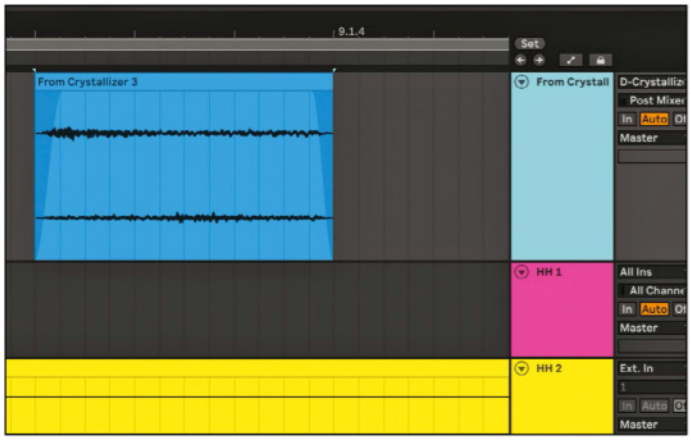
Make techno effects

Techno is driven by sound design and constant modulation of sound sources to shape exhilarating mixes. Here are some tried-and-tested methods to make your own...

> Step by step 2. How to create techno effects

1 > Create an aux/return track and add a multi-effect, like Soundtoys Crystallizer on it. Set the effect plugin's Mix to 100% and the Recycle all the way up. Increase the output volume on the multi-effect. Try testing several percussion sounds and sending them to the aux/return with the multi-effect to see which one sounds best.

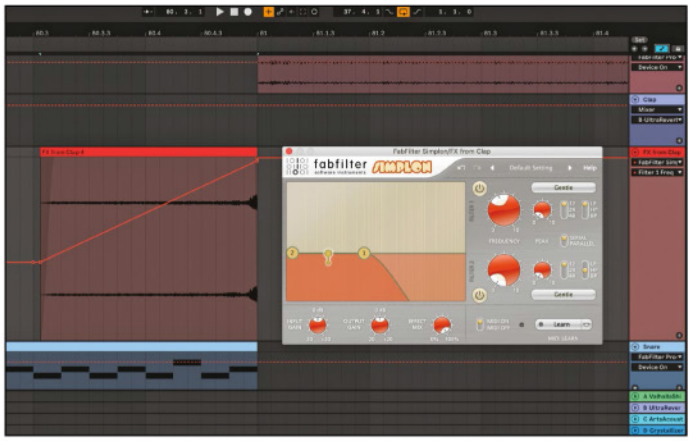
2 > Create an audio track, and set the input on it to the aux/return track. Enable the Record function and record in the processed audio from the aux/return track of the multi-effect. While recording the percussion track, turn the send to the aux/return up quickly, then turn it down.



3 > Once you finish recording, edit the recorded audio into smaller pieces and try reversing the recorded samples. Use the fade tool to adjust the length of the audio files.

4 > To create transition sounds or sweeps with reverb, create an aux/return track and put a reverb that you can use to create a long reverb. Choose a big environment, like a large hall, or cathedral. Set the decay time to around 15s, the room size between 90 and 100.

5 > Send your snares or a clap to the aux/return track with the long reverb. Create an audio track, and set the input to the aux/return track. Enable the Record function and record in the audio from the aux/return track. After recording, reverse the audio. Use this sound as a transition element in your track.



6 > You may need to trim off the initial transient of the recorded sound to make the sweep sit well in the mix. Add an EQ or filter to it and modulate the filter cutoff of the sound. During a transition, start with the low pass filter between 300-500Hz, and automate the frequency of the cut-off filter to open it up all the way.

7 > Try making effects by using a creative reverb-processing plugin, like Valhalla Supermassive, or Native Instruments Raum. Valhalla Supermassive is free, and offers a combination of reverb and delay processing. Create an aux/return track and place your chosen reverb plugin on it. Find a cool-sounding preset to work with and make the reverb plugin 100% wet.

8 > Reverse one of your percussion tracks and send the audio from this track to the aux/return track with reverb. Create an audio track, and set the input to the aux/return track. Enable the record function and record in the audio from the aux/return track. After recording, play around with the audio by trimming it into smaller pieces, and use the fade tool for smoother fades.

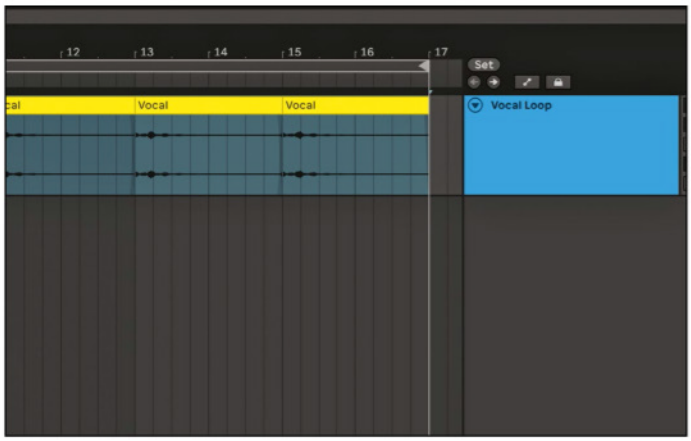
9 > Process the effects even further by creating an aux/return track and putting an effects processing plugin like Eventide H3000, or another multi-effects processing plugin like BYOME by Unfiltered Audio on it. Send the recorded effects to the aux/return track with your chosen effect plugin. Lastly, add a filter like Simplon and sculpt your sound so it works in your tracks.

Edd Westmacott / Alamy Stock Photo

Creating a techno atmosphere

Ambience, space and atmosphere are all pivotal to making your techno track translate and resonate with people. Here's a method of concocting some serious vibes...

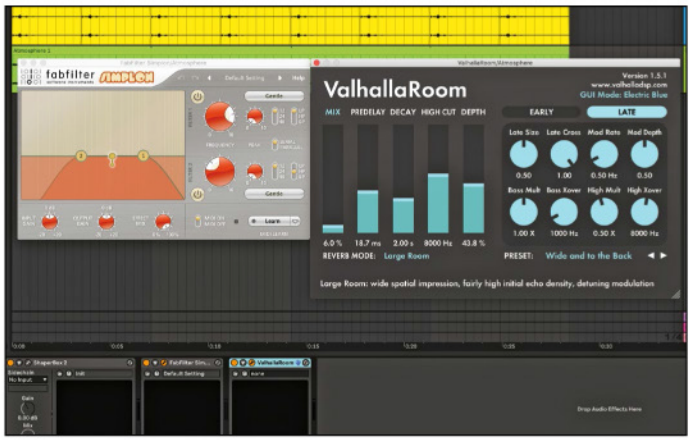
> Step by step 3. Develop an atmosphere



1 > Take an element from your track in order to create an ambience in the main key of your track. A few elements that could work are a vocal, synth part or percussion loop. If you are using a vocal sample, cut the audio down to your favourite section and copy/paste this section so it repeats in a consistent pattern for an eight-bar loop. If you are using MIDI, repeat the MIDI note several times.

2 > Drop your DAW's reverb or another reverb that has a freeze function onto the track, and increase the size and decay time. Turn the D/W to 100% and play your loop. Once you hear a section you like, press Freeze on the Reverb.

3 > Create a new audio track, and route the audio from the track with reverb to the new track. Record in the audio from the track with reverb to the new track. Make the atmosphere sound even more interesting by adding a shaping plugin like ShaperBox on the recording to give it a groove. In ShaperBox, try using a volume effect and apply a rhythmic pattern.



4 > Add a filter like Simplon or EQ to the track, and use low and high-pass filters to cut the low and high frequencies to shape the sound. Add another reverb to push the sound to the side and back even more

5 > Enhance the stereo width of the atmosphere by adding a stereo-widening plugin like iZotope Imager, or StereoSavage. Try using the rotation effect for a natural-sounding panning effect. Play the atmosphere in your mix, set it to the correct volume and adjust the EQ to taste.

6 > To create an atmosphere with dark reverb, choose a synth loop to work with and add a reverb as an insert on the channel. Adjust decay time to 3.62ms and turn D/W down. To go darker, cut high frequencies by using the high-cut filter on the reverb on frequencies above 400Hz. We used KSHMR Reverb as the reverb plugin, with its Soft Transient function that can diffuse sharp, percussive sounds.

7 > Continue to sculpt the reverb by adjusting early reflections and high diffusion values. Early reflections are the echoes that reach a listener's ear first. High diffusion values result in more dense echoes, creating a washed out reverb effect. Turn Reflections down by about -2dB, and Diffuse up by 1.5dB. Adjust to both these parameters to taste as the values will depend on your loop's content.

8 > For greater reverb control, try adding it to an auxiliary/return track and sending audio from the synth track to the aux/return track. Create an aux/return track and copy the reverb you created onto it. Set Dry/Wet control on the Reverb to 100% wet. On the synth track, set the Send to the aux track with Reverb to taste, or set Send to 100% and bring the volume fader of the aux/return track down.

9 > Shape the reverb sound on the aux/return track by adding an EQ before or after the reverb, and using a high and low-pass filter to cut out the low and high frequencies. Add an effect like ShaperBox, to add a groove to the reverb or a compressor to reduce any transients from the synth track. If you used KSHMR Reverb for your reverb, turn up the Soft Transient control knob to lessen sharp transients.

14 techno tips

01 ADD REVERB ON A KICK

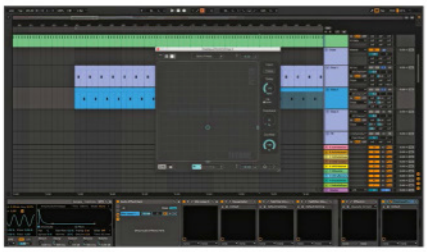
There are a lot of ways to process your kick, depending on the type of sound you're going for. Add a reverb plugin directly to your kick and it adds a distinct vibe. Use an EQ or filter after the reverb and filter out the high end to make the sound darker. Try adding a distortion or saturation plugin like FabFilter Saturn 2 after the EQ. If you decide you want to use the processed reverb as a layer on top of your main kick, try adding a volume side chain like Kickstart 2 so that the reverb plays after the main kick.

02 PARALLEL DRUM PROCESSING

After you have finished creating your drums, group them together and send them to an aux/bus track with a parallel compressor on it. Use a compressor like Arturia Comp FET-76 for parallel compression with a fast attack, fast release and the ratio set to ALL. Add an EQ and cut out all of the low end and bring down the volume of parallel comp aux/bus in the mix. The parallel comp will help make the elements in your drum group blend well together.

03 AUTOMATING PARAMETERS

As techno is built around grooves, it's especially important to use automation to add movement to sounds to keep them flowing and sounding natural. On a synth, automate the filter cutoff as it comes into tracks and during the breaks. Other important parameters to automate on a synth are attack, decay, sustain and release. For example, you could automate the decay and release up before a break and bring them down for the drop.



04 SHADOW HILLS MASTERING COMPRESSOR

Try putting the Shadow Hills Mastering Compressor on your Master bus when you start a session. Techno should feel compressed and squashed and this plugin will help you achieve this sound.

Shadow Hills Mastering Compressor is techno stuffed into a bottle

05 CLAP LAYERS

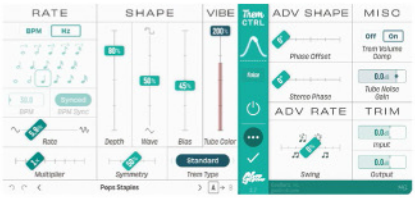
To add movement to your drums, try layering every other clap or every fourth clap in the rhythm. Choose a clap that complements your main clap. Try detuning the clap layer, or use zplane Elastique Pitch to pitch it down. Add a bitcrushing plugin on top or FabFilter Saturn 2 to saturate the sound.

06 DRUM BUS

Create a simple drum bus by sending multiple percussion parts (eg the open hi-hat, closed hi-hat, cymbal, ride and/or top loops) and send them to an aux/bus. Process them with tape saturation (eg Universal Audio's Studer A800 Tape Recorder or Waves Abbey Road Vinyl Plugin) then an EQ like the API-2500. Follow with Slate Digital's VBC FG-MU or a similar bus compressor then an EQ that can add some air to the top end, like the Maag Audio EQ4. An idea to finish off the chain could be a plugin like the SPL TwinTube to add character.

07 PITCHING DOWN THE RIDE

Pitch down the ride (or hi-hat) in an arrangement. This is a simple trick that can be used during transitions, like the end of a buildup section. Over a four or eight-bar period, use a plugin like zplane Elastique Pitch V2 and automate the pitch down on the hi-hat or ride. You can also use Pitch Automation in a DAW. In Ableton, open the clip and navigate to the Envelope section. Select Clip and then Transposition, and automate the pitch down. Return the pitch to normal (zero) after the transition section.



08 ADD MOVEMENT TO BASSLINES

Make your basslines more interesting using a Tremolo plugin like Goodhertz Trem Control, Ableton's Auto Pan or similar and automate the modulation. Next, add a filter like Simplon for automation on top, and automate the low-pass filter frequency to create a rhythmic pattern on your bassline.

09 STUDY ARRANGEMENTS

Many producers can create a loop that sounds good but an entire track requires a different skillset. Listen to arrangements from other producers to learn how to tell the story of a track, and how to build up tension and release by using contrast and automation. A good exercise is to listen to an arrangement, and write out the elements you hear playing in each eight-bar sequence.

10 REVERB AUTOMATION

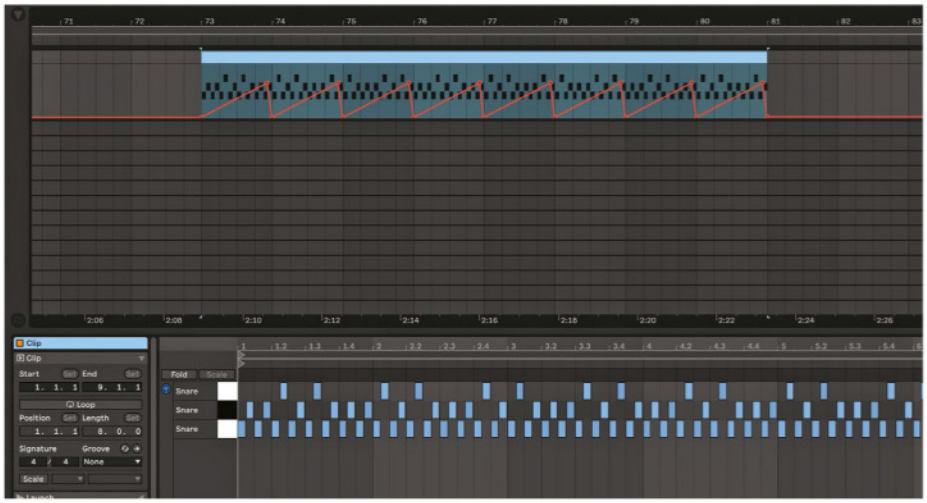
Automate synths, supporting melodic lines or effects with reverb. Create an aux/bus track and put your favourite reverb on it. Make the reverb long by setting the pre delay to around 7.5 or 8ms and set the decay time to six seconds or longer. Add a rhythmic inspiration tool like Cableguys ShaperBox to the chain to create a fresh groove and lastly add an EQ or filter to cut out the high end and make the sound darker. During the buildup, try automating the send to the aux/bus on the reverb chain up and bring it back to normal before the drop.

12 USING DELAY TO ADD MOVEMENT

You may want to add more movement to your main synth line or a supporting part by using delay. Copy the part you'd like to work with to a new track and add a delay to it, like Soundtoys Echoboy or Waves H Delay. Pan the original track to the left and pan the delayed channel to the right. Now that the track is doubled, adjust the volume of both tracks accordingly in the mix.

13 WORK WITH REFERENCES

It's a good idea to use a reference track when creating a song, whether it's for the sound design, melodic or percussive ideas or arrangement. On your master bus, load up a plugin called ADPTR Audio Metric AB. This plugin allows you to load up multiple references and A/B your mix with your reference track. For example, if you would like to use a similar kick or bass to one that's in the reference track, Metric AB allows you to quickly check how close or far you are from your desired sound.



A tale of three snares

11 MAKE YOUR SNARE ROLLS MORE INTERESTING

Make your snare rolls more interesting by processing each of them a little differently. In a Sampler like Battery, or Drum Rack in Ableton, put the same snare on three different MIDI notes and EQ each one a little differently. This way when the snare roll plays, there will be a variation in sound each time. Program in a 1/16 note snare pattern, and assign the first six notes a different velocity. This will create more of a polyrhythmic groove over the top of a four-on-the-floor drum pattern. Double the length of your pattern, and move your MIDI notes to different notes.

14 WASHY RIDES

An element that works well in techno is washy rides. To create this sound, add an EQ like the Pultec MEQ-5 to a ride track. Set the peak to 500Hz and add 3dB of gain, and lower 5kHz by 5dB. Add the Goodhertz Vulf Compressor and use the 2-Bus Glue Parallel preset. Send the ride to the aux/bus that has the main reverb on it. Create another aux/bus, add a saturation plugin like Waves Abbey Road Vinyl Tape and an EQ to cut the lows and boost around 2700Hz. On another aux/bus, add Universal Audio Cooper Time Cube MkII Delay and try the Pseudo Spring with Echo preset. Send your ride to the Cooper Time Cube aux/bus and adjust to taste. **cm**

Abbey Road Vinyl/UA Cooper Time Cube can help give your rides a wispy allure

APASHE

Blending the world of classical music with a hard-hitting, electronic ethos, Apashe is operating within a uniquely epic sonic universe. With his latest album *Antagonist* solidifying this alchemic approach alongside the 69-piece Prague Philharmonic Orchestra, we caught up with him to learn more about the scope of his ambitions...

> "I've done just a tiny percentage of what he's been through, but I've not got a Tim Burton friend who's asked me to score 50 movies for him yet." Apashe – real name John De Buck – is sharing with us his love of legendary cinematic maestro Danny Elfman; both an inspiration to the Belgium-born Canadian genre-blending musician, and his idea of a dream collaborator. "He's kind of like me. I feel like he's also done that switch from being in a band and making mostly pop-rock music and then Tim Burton hit him up to score music for movies. Now he's writing pieces for classical music. That really sparked my interest. That's both what I want to do and kind of what's happened to me already. I wish to be like him, one day"

We're speaking to Apashe during the mixing process of his new album *Antagonist*, the follow-up to 2020's *Renaissance* – wherein the style-mashing polymath enlisted the Prague Philharmonic Orchestra to take his emotive and intense electronic tracks and expand their sound into the realms of the hyper-cinematic. *Antagonist* continues the journey, adding the Bulgarian Symphony Orchestra and a children's choir into the mix. "It's definitely easier because I know what I'm doing a little better," explains John. "For *Renaissance* it was almost like jumping into the unknown. I didn't know what was possible and what was really complicated to write. What can you ask of an orchestra and where's the room between the two spaces? All the small little details I didn't quite know. So now it's more complicated because I know there's more room. Now the question is how do I make that work."

Tuning up

John's route into music came while studying electroacoustics at Concordia University. From there, his career developed into a stint at Apollo

Studios in Montreal, where he worked as a co-producer on the sound design for numerous video games. In 2014 he embarked on his own artist career. With his recent settling into an electronic-meets-classical hybrid style, we wonder where his interest in this fusion began? "It was a journey because originally – as a teenager – I was just sampling classical music because I loved it. It all kind of started from that point in time. I just love taking really old recordings and trying to make something new out of them. I've always been a fan of sampling culture, and then after a while you kind of realise that *everything* has been sampled, everything has been eaten up and chewed a million times. It's hard to make something original. Then it was around the same time that I went to university to study music and it was there that I learned about orchestration."

"[At university] I got into film music and then music for advertising. I was learning all these different things, and trying to play with different instruments. I loved all of that and it was nice when, for example, [when freelance trailer-scoring] a client wanted an orchestra, you could use something like a Kontakt instrument and then play around with it."

Though John began using orchestral sample libraries, such as those designed by Spitfire and Orchestral Tools, he began to be irked by a perceived lack of realism. "At the end of the day, some of them work and some don't. I love those libraries but it came to a point where I wasn't getting a certain tone from samples that I like. I wondered if I needed to print it on vinyl then record it and destroy it? I didn't really know how to get the tone I liked."

> "I find that software choirs work well when it's sustained notes and it's kind of 'big'. As soon as you want details then it's a lot more difficult"

It was at this point that John began to look for smaller ensembles that he could record, before sampling (and muddying to taste) later. "For *Renaissance* we did the first symphonic orchestra with the Prague Philharmonic. I had a lot of fun composing and having that back and forth with the arranger."

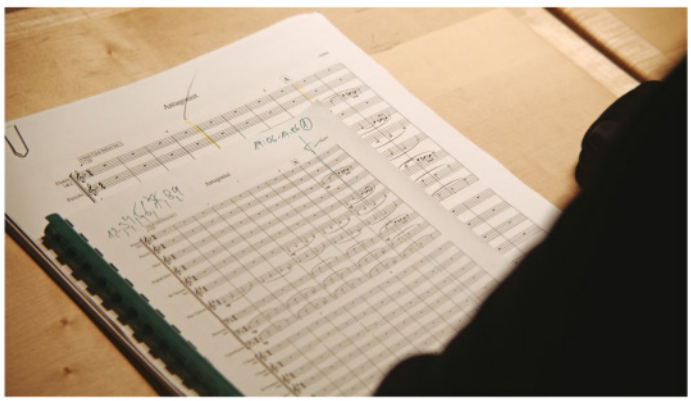
But recording the orchestra wasn't always enough; John wanted to get his hands dirty with the finished stems "Getting the stems and destroying the recordings was fun. Sampling yourself means you can directly do what you want or what you need. This new album *Antagonist* is my second try at composing for an orchestra and then sampling it."

Revenge of the orchestra

John points out that, in terms of similarities, electronic music and classic forms really have very little in common; "Electronic music is a lot more repetitive and is often more really created for dance purposes. It's loud and compressed. Classical music can't really be as repetitive or loud, and you can't compress those classical instruments really because they'd just sound really bad. They're almost the polar opposite in a lot of ways."

Listening to some of the new record's (in production at time of writing), tracks such as the epic *Gasoline* (which features Delhi-based hip-hop artist Raga), the incendiary *Revenge of the Orchestra*, the intense, choir-dominated *Rise at Nightfall* and the bouncing *Hasselhoff*, we're blown away at the scale and complexity of the arrangements. We wonder if John sections these arrangements to make space for the more classical moments?

"I don't necessarily put the arrangements into 'sections', but I like to keep the old sampling ethos of trial and error. I'll really feel that section that I composed for the orchestra then I'll decide what I do with it. How can I chop it? How can I effect it and re-use it? So, sometimes it works,



Photos: Adrian Villagomez

sometimes it's difficult. I wouldn't say it's easy all the time but it's definitely an infinite source of inspiration. For me it's pretty easy. If it went through the filter of being recorded already, that's because I like it and if I can't chop it up or sample it too much then I'll keep it as is."

We ask more about a few of the tracks we've highlighted. Firstly, we're staggered to learn that the massive, hellish choir in *Rise at Nightfall* is software-based. "The choir there is fake at the moment. When the symphonic orchestra is real it gives you leeway to sprinkle some software on there, it sounds really real though. That one is pretty straightforward. It was just a recording of the orchestra with that on top, there hasn't been any sampling on top of that one yet. We're recording with a choir in two weeks, but not for this track; I actually kind of like how the software choir sounds in this there as it is. I find software choirs work well when it's sustained notes, and it's kind of 'big'. As soon as you want tricky details, words and vocalisations then it's a lot more difficult, but for that kind of use, it's actually quite good."

With all of these classically-disciplined musicians to command, we correctly assume that John reads and writes sheet music. "I read music enough to ping-pong with my collaborators. I work in Sibelius," John explains. "I did two years of orchestration study at university, so I do read music and I used to work in Finale [at university] so I can use multiple programs for notation. Now I work with an

orchestrator, Frederic Begin, who I get to write straight partitions (sheet music per-instrument). When you write for 65 instruments, it becomes a whole different job. I don't even know any composer who does their partitions themselves. It's a job in itself."

John describes in detail his demoing process, and shares that most of his demos have placeholder string sounds via Kontakt and Orchestral Tools' libraries. "Basically I send Frederic all MIDI stuff and then we bounce back the Sibelius files. I mostly re-touch articulations because the rest is always kind of good. He really copies my demos and the difficult part is that I want the recordings to sound like anything but my demos. They're made in the box so I try to go as far as I can from there. But that's his reference point. He always has the best suggestions to bring life to my compositions."

Boxed-in

John tells us that though most of the sessions for *Antagonist* were recorded into Pro Tools, he likes to mix using Ableton Live. "I prefer mixing while I compose, I do that easily in Ableton Live. It's too much of a pain to stem things out and put it back in. I only really like Pro Tools for recording elements. It's been a few years but my Pro Tools shortcut skills are getting slow now."

Apashe is something of an Ableton aficionado, but he's recognising similar momentum over at Bitwig. "I feel like more people are drifting towards Live, and Bitwig is also attracting new people. Ableton started in a similar place to where Bitwig is now. Ableton became a reason to give up on your old DAW and switch, and Bitwig is starting to get that same traction."

> "I'm all the way in the box, the only thing I use [outside of] the box is when I record analogue synths"

Within his Live-based setup is a pickle-tray of familiar mix plugins: "I'm all the way in the box. The only thing I use that's not in the box is when I'm going to record some synths. It's all toys for me that I play with. It's either fully instruments or in-the-box. I'm starting to use more Live plugins, otherwise I'm digging into the Melda Production bundle, I use iZotope. Because I'm old-school I still use Waves a lot for things like vocals. For mixing, aside from the Melda, I've been using Oeksound Spiff and Soothe a lot for creative stuff. Soothe I've been using to remove all the resonance from stuff, it's more creative mixing type stuff. Otherwise I still used a lot of UAD plugins. One I surprisingly like is 'bx_ subsynth'; it just creates a nice sub underneath. In my mixing folder it's just all the Waves stuff. The rest is mainly Ableton stuff, or effects."

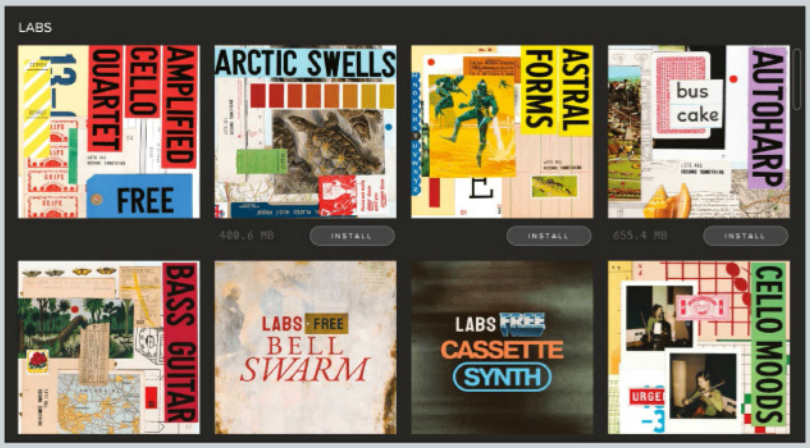
On the effects front, iZotope's Trash 2 has been one of John's regular go-tos for years, but he hugners for an upgrade; "I feel like it's time for them to bring out Trash 3 at this point," John laughs. "Also, I must mention CLA from Waves, then a bunch of racks from Ableton. I really like RC 24 and 48 – two reverbs from Native Instruments. I used to use a lot of Native Instruments' stuff but I kind of stopped. I use Melodyne a lot for my stems, but that's less of an effect and is more of a tool. Then two of my favourites that really helped with giving some tracks the 'sample' tone was Ocean Way Studios from UAD. It emulates a beautiful room, it makes for a superb sampling tone. Otherwise the EMT 140 which is another plate reverb."

Every second counts

A standout track, *Hasselhoff*, features a guest appearance from Estonian rapper Tommy Cash. We ask how this pairing came together? "So I was on tour in Tallinn, Estonia," explains John, "and he DM'd me asking if I wanted to hit the studio. That was the starting point. We'd already said that we'd work on something together but nothing concrete came out of it until I was in his city and I didn't know he was living there. He showed me a bunch of songs that he was working on, that was one of them. I basically took it from there and did the version for the

Selected kit list

Ableton Live
Orchestral Tools SINE
Native Instruments Kontakt
Spitfire Audio LABS
Melda Production Bundle
Avid NotePerformer for Sibelius
iZotope Ozone 10
Oeksound Soothe and Spiff
UAD Manley VoxBox
UAD Ocean Way Studios
Waves CLA series
iZotope Trash 2
Waves RC 24 and 48
Brainworx bx_subsynth

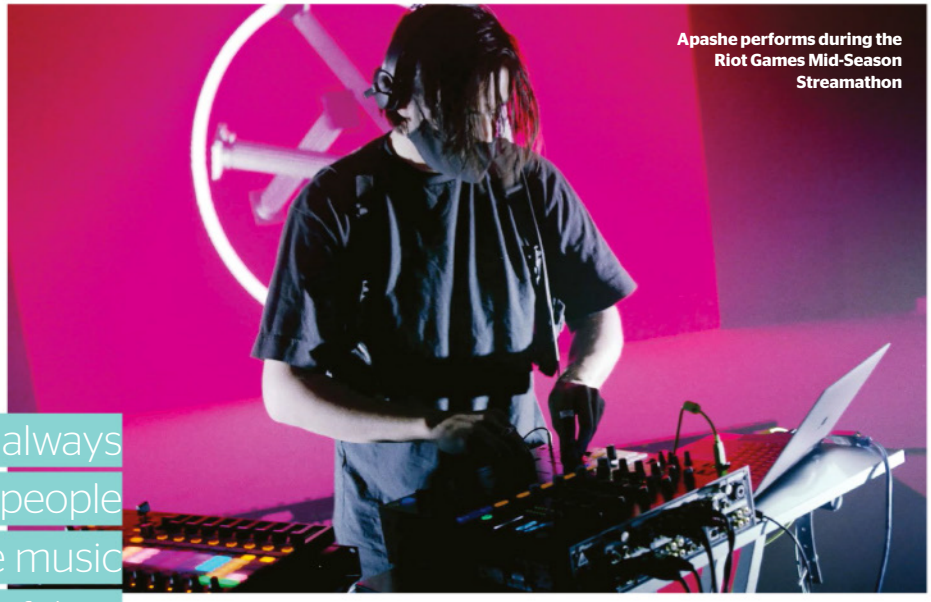


Bring the beef

As mentioned, Brainworx' bx_subsynth is a regular feature of Apashe's low-end processing chains, although for most of his tracks, the low-end is generated from hardware synths. "I used to like plugins like [Waves] Renaissance Bass," John explains, "but that was just taking the sample and pitching it down to create that low end. Bx_subsynth creates a synth out of it that follows it. It's mostly just for when something's thin: I will do that and then put some harmonics on it and then still remove the low end. It's just to kind of beef it up. It's a tool to create content that's not there originally in a sample. I find it really useful. At the end of the day, when you do that, you end up kind of cutting it out quite a bit, just because there will be another proper synth somewhere in the song and I don't want it to clash."

album. There is still a whole part that I want to re-record. I want to record a trombone solo in there too. His demo was very hip-hop, it had like 808 and chords. It was kind of like a bit of a loop, but it was really moody. I chose that one because I felt the potential of it."

John explains that the songs for this second symphonic epic came together fairly briskly: "It does double the work when you have to record it with a symphonic orchestra, you need to do the song and then you need to make a demo for the orchestra and then partitions for all of the parts, then put it all back in the original demo. It's longer than just mixing a standard track by yourself. I think the fastest was probably the track *Lost in Mumbai*, then *Hasselhoff* came together pretty quick. The one that is taking a while now is *Human*. That track was originally a pitch for the *Fast and Furious* trailer and then I had to make modifications for them. Then for like nine months they gave no update, so I thought they weren't going to use it; so I made a new version of it for me, and then they came back and said they were going to use it. Then, they wanted a few changes to suit their needs. I found an in-between version of what they wanted and my new version. Now, I'm changing just a bunch of things because we're doing a video on it, and I want it to kind of fit."



Apashe performs during the Riot Games Mid-Season Streamathon

"I would always encourage people to make music outside of their career ambitions"

On the trailer-scoring front (something of which John has years of experience) we wonder what approaches demonstrably work when handling new briefs? "I guess just be fast! That's the only real skill you need. So many people are competent musicians and could do it – but the real difference is just being able to adjust and turn things around quickly. Being called two days prior to a deadline and being asked to make something is commonplace. That was the case for *Human* [the *Fast and Furious* track]. I had 48 hours, including writing with a rapper and everything, so it was all really really quick."

Keeping connected

We ask Apashe whether, while focusing on big projects like this, he has time to just be spontaneously creative and think about other tracks outside the world of the record: "I'm constantly working on other stuff, I feel like it helps to just step back from tracks. When you're stuck in there you can get lost. It's hard to make conscious choices about whether or not you like it. There are so many possibilities with every song, so many avenues you can take it down. For me, I need to kind of step out of it then come back later. I really like to sleep on songs. Often when you work on it a lot you don't really feel it anymore. That's not necessarily because it's bad. If you reopen it two weeks later when you've kind of forgotten about it and you still feel it, then you know it's worth finishing."

When it comes to mixing, it's important for John to listen closely, but that can lead to its own problems: "I love mixing but I sometimes hate the process because you're so disconnected from the song. You're just obsessed with tiny details, and how every sound fits."

With the album imminent and a 29-date US tour looming on the horizon, Apashe's name is in the ascendancy. We wonder what advice he'd give to anyone looking to get a foothold today? "It just depends on *why* you want to start. Do you want to start a career or just make music because you like making music? It's often two different things that I see across all the people that I meet. You will have people who want to do it as a job and want to be up on stage.

"Then you have people who make music because they've always made music and that's what they like. Then it just happened that they can make a living out of it, so they work to make that happen. I'd always encourage people to make music regardless of their career ambitions. It's becoming easier and easier. If you want to listen to yourself. It's never been as easy as it is now, and it's only going to get easier." **cm**

Apashe's *Antagonist* will be released to coincide with a 29-date US tour that kicks off this autumn

HEAR MORE

Devil May Cry
bit.ly/apashe_dmc

Gasoline
bit.ly/apashe_gaz

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Filterscape
Murky Delays

HIVE 2
HS Ontomat

u-he
HS Growing to 600

SATIN
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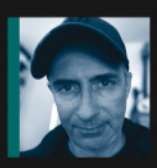
Synth Masterclass
with *Dave Gale*

42 Modern tape strings

Dave Gale teaches you how to evoke the nostalgia of tape effects from the convenience of your DAW



Mix Masterclass
with *Jon Musgrave*

46 Using short delays

Jon Musgrave continues his masterly mix series with an exploration of how to use short delays creatively

Download the accompanying video and the MIDI/audio files at **bit.ly/cm327downloads**

Modern tape strings

When you want a hint of vintage, but you're keeping things contemporary, our very own ZebraCM has all the tools to wow... and flutter!

Dave Gale

Dave Gale is an Emmy award-winning media composer, producer and orchestrator, with an enormous passion for synthesisers, in all their forms. His varied composing style embraces everything from full orchestral and hybrid scoring, to fully electronic scores, employing synths wherever possible. He also happens to own some of the finest synths in existence but we're not jealous, OK?

Nothing conjures up the vintage sound more than analogue tape. While the days of huge reel-to-reel multitracks have become the preserve of a few choice studios, 'real' tape delays are enjoying a renaissance, both hardware and software forms.

The popularity of sounds from vintage machines, like the tape-based Mellotron, continue to be exploited in a number of production circles. This beast of a machine was an early form of sampler, before sampling went digital. Playing a note on the Mellotron's keyboard would activate a tape-rolling mechanism, where the recording of a chosen instrument would be replayed, in real-time, by tape! But even in contemporary live settings, there have been attempts by artists such as Nine Inch Nails to use cheap and cheery cassette-based 4-tracks, to replay pre-recorded chords, using the faders and pitch control to alter harmony. Thankfully, we can adopt a more pragmatic approach, but what do you do if you want that hint of vintage, but want to keep your sounds far more contemporary?

In this Synth Masterclass, we're going to use a randomised LFO to emulate the sound of a well-worn tape, thus creating the wow and flutter effect which is so heavily associated with the concept. We're also going to concentrate on keeping our initial sound sonically rich and contemporary, with some bright saw waves, with a little bit of added white noise, to aid the overall texture. So grab your ZebraCM (from within our CM Plugin Suite) and let's get crinkly!

> Step by step

1. Make modern tape strings with ZebraCM

1 > We'll begin by initialising a patch on the ZebraCM. Open up your DAW and load up the plugin. Once the plugin window is open, move to the central display at the top of the window, click to reveal the drop-down menu, and select 'init' from the bottom. This will initialise the patch.

2 > To avoid any possibility of damaging your monitoring, and your ears, reduce the ZebraCM master volume to a level of 35. Just as a reminder; every time you tweak a pot or setting on the plugin, you will see an accurate value/numeric in the upper display.

3 > We begin creating a sound by turning our attention to OSC1. We want to use the default sawtooth waveform, which should be visually apparent post-initialise. Check that the volume of OSC1 is set to the 12 o'clock position, which should read 100 in the upper display.

4 > Staying within the OSC1 section, we want to introduce some wave aliasing, which we can do by highlighting the 2 in turquoise, in the upper left-hand corner. This will immediately sound phased, but we can alleviate this problem by increasing the Detune pot to a value of 4.

5 > Next, we can shuttle across to OSC2; we will also leave this set to a sawtooth waveform, but unlike OSC1, we will need to increase the volume from its default of zero. Increase the volume pot to a value of 100, and adjust the Detune pot to a value of -3.

6 > To add further colour to the saw-based oscillators, we'll introduce some white noise into our sound. Within the Noise section, select the Stereo option and increase the volume pot to a value of 38. You can also check that you have white noise selected by default, indicated by the icon in the upper left-hand corner of the noise section.

Download the accompanying video and the MIDI/audio files at **bit.ly/cm327downloads**

> Step by step 1. Make modern tape strings with ZebraCM *(continued)*

7 > We can sculpt our patch by using the filter section; first, select the BandPass filter described as BP QBand, from the filter-type dropdown. Then adjust the cutoff pot to a value of 28, before also adjusting the user-defined ENV2 pot to a value of 61. This means ENV2 will be modulating the filter's cutoff, as we play notes on the keyboard.

8 > Move to the Envelope section, where we'll adjust the values of ENV1, controlling our patch's amplitude/volume. Set the Attack pot to a value of 47, Decay to a value of 50, the Sustain to 80, and finally the Release to 8. This will provide a slow fade in, at the beginning of each note, but a quick release on the back-end of each note.

9 > As previously mentioned, ENV2 will be controlling the cutoff amount within the filter section. Set the Attack pot to a value of 62, Decay to a value of 50, the Sustain to 80, and finally the Release to 8. This should provide a swell in the brightness of the sound, at the beginning of each note played.

10 > Now it's time to apply our tape effect; move to the LFO section and select Rand Glide (Random Glide) from the drop-down waveform menu. Adjust the amplitude pot, to a value of 26. This control reduces the height of each wave oscillation, and hence the amount of LFO output. By decreasing, you get greater control over the modulation.

11 > We need to indicate the amount of detune being applied to each oscillator, so moving back to OSC1, select LFO1 from the dropdown menu immediately below the Tune pot. Then click and drag the small turquoise circle, to the right of the main pot upwards, to a value of 2. This value assigns the amount of LFO-induced detune modulation.

12 > Finally, we need to do the same within the OSC2 section; select LFO1 from the dropdown menu, immediately below the Tune pot. Then click and drag the small turquoise circle, to the right of the main pot, but this time downwards to a value of -2. You should now have some tape-style 'wobble' on your patch!

PRO TIP

EVEN MORE VINTAGE

We've made every effort to keep this patch usable within the contemporary domain, but even while keeping things up-to-date, you may well want to dial up the vintage quotient to the extreme. There are many occasions where this might be required, even while exploiting the most up-to-date production techniques. Unsurprisingly, the filter that we use will have a huge effect on the overall sound of the patch. By using a band-pass filter, we eliminate upper and lower frequency content, but within the ZebraCM we don't have an enormous amount of manual control over this parameter. One way to create the classic music-down-the-telephone effect, is to employ an EQ, within your DAW, by placing a heavy cut on both the lower and higher frequency bands. This emulates a telephone as the bandwidth of traditional landline telephones is very narrow, compared to the sharp digital output we get over a mobile network. Still, this has its place, and you can add to the sound by boosting middle frequency content. There's also nothing to stop you adding specific vintage emulation plugins. From tape delays, to valve channel strips – they all add to the vintage effect.

Tape effects lend Moby's *Porcelain* that vintage lift

Photo by KMazur/Wirelmage

Mellotron voices loom behind *The Tourist's* chorus

Photo by Erika Goldring/FilmMagic

RECOMMENDED LISTENING

MOBY
PORCELAIN
The opening chords typify the effect that we have attempted to make today, with vintage colour and string-based amplitude swells.
bit.ly/moby_porcelain

RADIOHEAD
THE TOURIST
This track includes the perfect placement of a Mellotron choir, with the return of each chorus. Highly identifiable and brimming with vintage charm and colour.
bit.ly/rh_tourist

Download the accompanying video and the MIDI/audio files at **bit.ly/cm327downloads**

Jon Musgrave

Jon is a London-based platinum award winning mixer, producer, composer and club remixer with a diverse CV that spans dance, pop, rock and music for media. He's also a long term contributor to *Computer Music*. Jon usually handles final mixdowns, which is why we've got him to share some of his pearls of mixing wisdom here

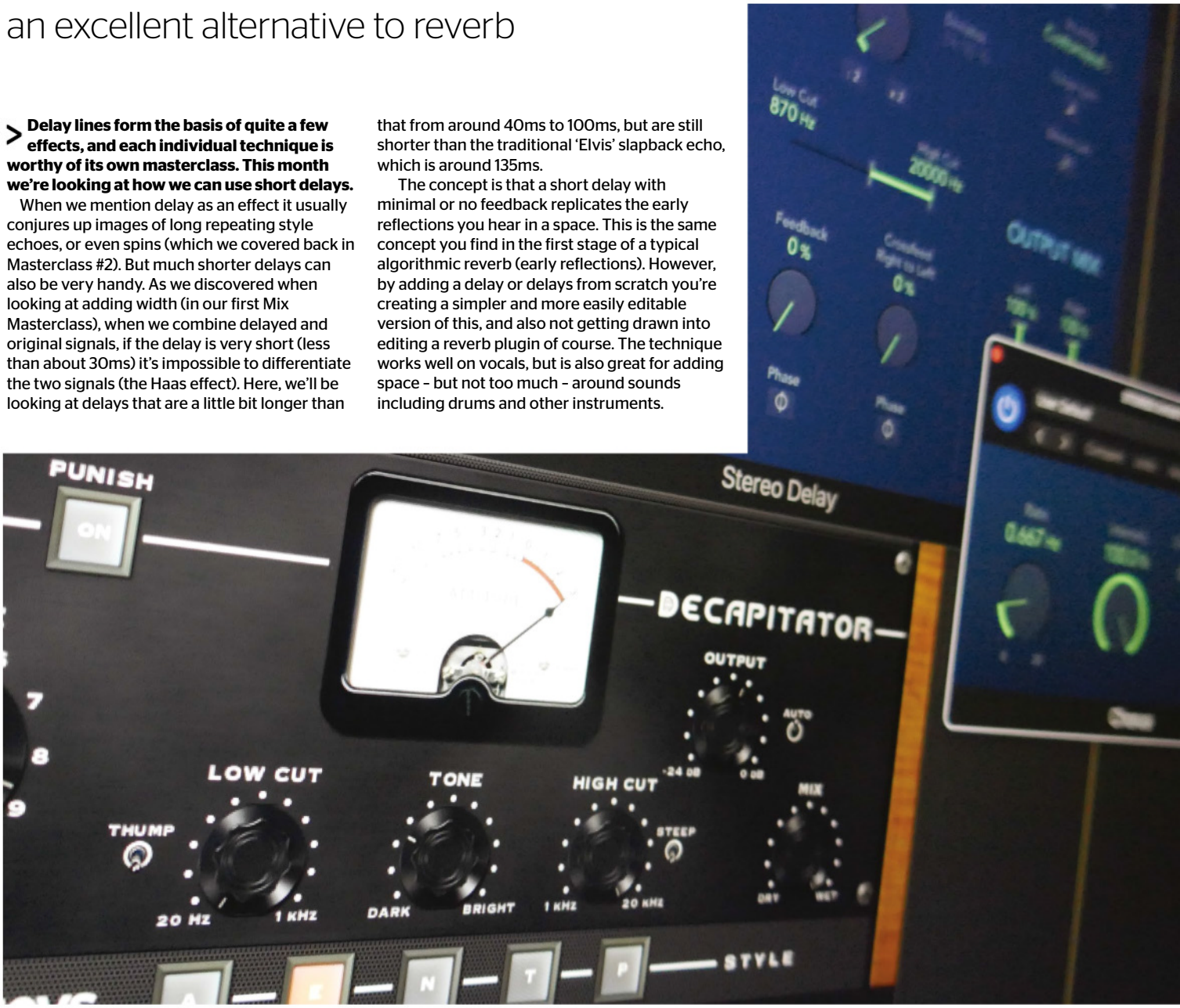
Short delays

Sometimes we want to add tight space to sounds, and this technique provides an excellent alternative to reverb

> Delay lines form the basis of quite a few effects, and each individual technique is worthy of its own masterclass. This month we're looking at how we can use short delays.

When we mention delay as an effect it usually conjures up images of long repeating style echoes, or even spins (which we covered back in Masterclass #2). But much shorter delays can also be very handy. As we discovered when looking at adding width (in our first Mix Masterclass), when we combine delayed and original signals, if the delay is very short (less than about 30ms) it's impossible to differentiate the two signals (the Haas effect). Here, we'll be looking at delays that are a little bit longer than that from around 40ms to 100ms, but are still shorter than the traditional 'Elvis' slapback echo, which is around 135ms.

The concept is that a short delay with minimal or no feedback replicates the early reflections you hear in a space. This is the same concept you find in the first stage of a typical algorithmic reverb (early reflections). However, by adding a delay or delays from scratch you're creating a simpler and more easily editable version of this, and also not getting drawn into editing a reverb plugin of course. The technique works well on vocals, but is also great for adding space – but not too much – around sounds including drums and other instruments.



> Step by step

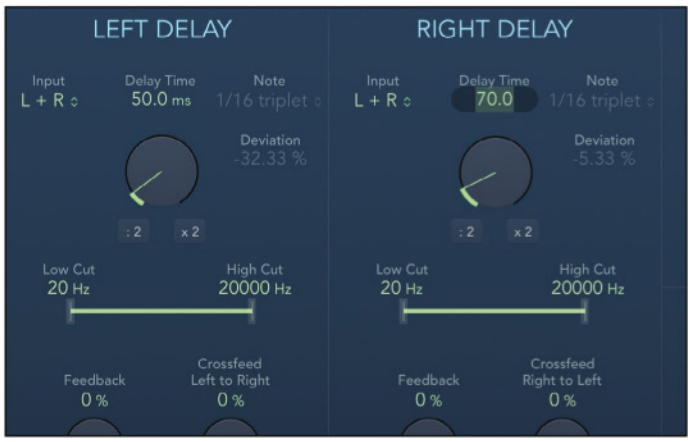
1. Short delays on vocals

1 > Vocals are ideal for this sort of treatment as you can keep them reasonably upfront and also blend in a small amount of longer reverb if required. Let's start with the simplest option which is a single mono delay, using our delay as an insert. Remember, you can also use an auxiliary, which we'll move onto shortly.

2 > First thing to do with our delay is make sure that it's not synced to the DAW tempo. Then set the feedback to zero and wet level to zero. Our starting delay for this effect is about 40ms, and we've then blended this in using the wet level of the delay, so dry level is 100% and wet level for us at around 20%.

3 > This adds tight space around the vocal – make sure you bypass to compare as this makes it much clearer. However, if you want a slightly deeper effect that moves the vocal away more, try a longer delay. We've doubled ours to 80ms but try any value up to the point where the slapback becomes obvious.

4 > This simple effect can be tailored in a number of ways including distortion and modulation (see: Pro Tip). However, the first and simplest way is to narrow the delay frequencies using high and low pass filters. You should have this option within your delay. We've set ours to about 300Hz and 3kHz respectively for a more focused effect.

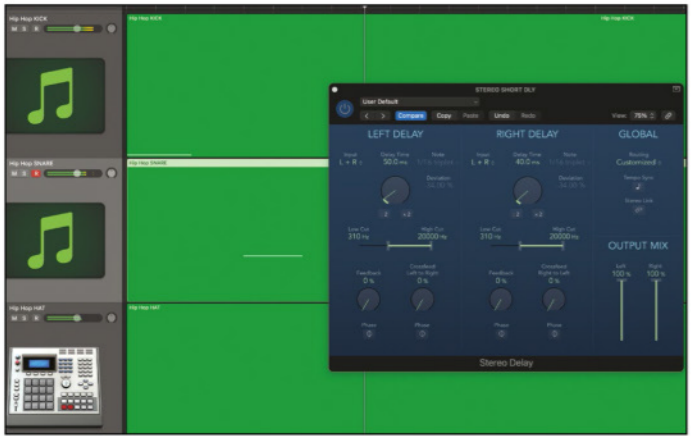


5 > Now let's try a stereo delay. We're going to continue with vocals but this time use an auxiliary for the delay plugin. Once again, zero the feedback of both sides and deactivate the tempo sync if engaged. Now set each delay with an offset between them. We've set ours to 50ms left and 70ms right.

6 > Gradually increase the send to the delay and you'll hear a small space appear but this time with some width. Set the send level to taste and much like reverb, modest amounts often work best. Finally, much like the single delay option you can finesse the effect using the filters to create a more focused sound.

> Step by step 1. Short delays on beats

1 > Short delays can also work very well with beats, so let's stick with the stereo delay effect but repurpose it. Snares and back beats generate obvious clattery room reflections in real spaces that we can easily create using delays. Start with timings that are quite similar – here we're using 50ms left and 40ms right.



2 > We're processing a hip-hop backbeat. As we increase the send level it gets wider, bigger and more smeared, and it's only at higher send levels that the delays are obvious. Try and find the sweet spot where the effect feels as one with the dry sound. Once again, use the filters to finesse the effect.

3 > The same kind of processing also works really well with drum kit snares, providing useful depth particularly if the room mics aren't really delivering. Here we've set the delay times to 60ms left, 40ms right and filtered off just the low frequencies (high pass 1kHz) to create slightly clattery reflections.

4 > So far, we've only tried single or double delays, but there's nothing to stop you investigating more complex multiple tap delays to create richer effects. Just remember, to do this you'll need a more capable delay, where you can ideally specify not only multiple individual delay timings, but also panning and levels.

5 > Bearing in mind we're trying not to get into slapback territory you don't want the longest delay any longer than roughly 100ms. So working back from that number, we've set ours to 100ms, 80ms, 60ms and 40ms with no feedback. You can, of course, try different timings within the timing limits originally discussed.

6 > Finally, we've panned the delays, with the two shorter ones hard panned to opposite sides and the two longer ones panned but more centrally. Trying this out on all our example audio produces a more complex, thicker result giving the sounds space while keeping them present and close.

PRO TIPS

PROCESSING THE DELAYS

In our walkthrough examples we focus primarily on choosing delay times, delay types and using filters and panning to modify them. But there are plenty of other ways we can shape the delay returns. One quite powerful option is to use distortion. In some delays, particularly tape delay emulations, you'll find integrated saturation or even selectable types of distortion which you can adjust to taste. But even if you're using a simple delay effect and that effect is on an auxiliary you can grab your favourite distortion processor and insert it straight after the delay. The distortion not only adds flavour but also smears the delays helping them blend. Another obvious choice is pitch modulation. This can work really well, even on short delays and adds some real time change to the delays, helping them blend. Try using slow to medium speed (up to about 0.70Hz) and maximum depth. Modulation options vary on delay plugins, so once again, if your delay doesn't include modulation you could process the post delay auxiliary return. Finally, although filtering usually does the trick, you can try more aggressive EQ on the delay returns. This is easy to achieve if using an auxiliary.

Billie Eilish's *Oxytocin* harnesses short delays

Ethan Miller/Getty Images

RECOMMENDED LISTENING

BILLIE EILISH
OXYTOCIN
Short delays can be great for adding tight space to close-up vocals like these
bit.ly/cm_oxytocin

GREEN DAY
REVOLUTION RADIO
For fast rock drums, short delays can help deliver a tight snare with some space
bit.ly/cm_revolutionradio

Creative SIDECHAINING

Sidestep modulation and automation, and give your sounds a fresh jolt by making one jump to the beat of another

Words: Peter Horam

Regular cm readers and experienced producers will be familiar with the concept of sidechaining, the most common use of which is for sidechain compression. This is still an often used mixing technique in electronic music production. With sidechain compression, rather than the compressor processing an input signal based on that signal's own dynamic characteristics, it processes it based on the dynamic characteristics of another signal – otherwise known as the 'key' input or sidechain. This key signal might be audible or silent, depending on whether it's an existing element of the mix or generated solely to trigger the compressor.

Sidechaining isn't only used for compression, though, and when you also consider that sidechaining is, in essence, a form of audio-controlled modulation, the creative possibilities begin to multiply. Compared to the relatively inflexible shapes generated by LFOs and envelopes, the modulation characteristics of audio-based sidechaining are practically limitless. Just one example would be generating precise rhythmic modulation using audio signals that change over time – modulating the modulators, if you will. And of course, any sound source is fair game; in fact, the less obvious the sidechain source, potentially the more interesting the results. You've probably sidechained a synth pad or bassline with a kick drum to impart a rhythmic feel, but why not try controlling an effects processor using your own voice in real time? Or how about synthesising a precise sound designed specifically to control an effect in exactly the way you want?

With this tutorial we aim to expand your creative sidechaining know-how, and we're going to do it using the 'hidden' parameters of Ableton Live's built-in effects. These walkthroughs will take you far beyond the typical volume pumping associated with sidechain compression as we experiment with filtering, delay, reverb and more to create complex and unique sounds.

Even if you don't use Ableton Live, you can still draw ideas and inspiration from this tutorial. There are endless sidechain-enabled plugins out there with which you can adapt and apply the techniques we're about to show you to your DAW of choice.

Sidechain, meet synth

Generally, any change over time in a synth sound will come from its built-in modulation systems or an effects plugin. Many effects include LFOs for modulation, while most, if not all, of your synths will feature at least the standard array of envelopes and LFO waveforms – sine, square, sawtooth, etc. A wide range of results can be squeezed out of these standard modulators, but using them exclusively means you're limiting yourself to the same tools that everyone else is also using. Wouldn't you rather come up with your own more interesting, less regimented modulations?

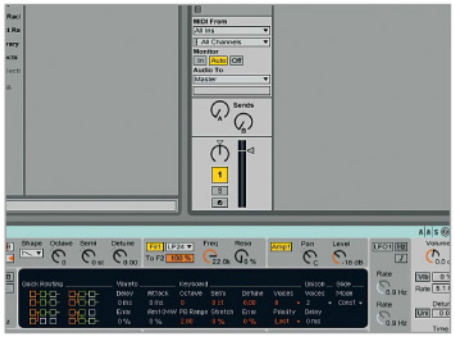
There are several advantages to be gained by processing synths with sidechained effects instead of (or in tandem with) their own modulators. Effects offer great diversity in terms of dynamic sound shaping and are capable of delivering results that are often more characterful and, unpredictable, since the keying signal can be any sound you like, rather than a cyclical waveform or an envelope with a fixed number of stages. You could use, for example, your own speech, kick drums, other synths, found sounds, acoustic instrument samples... Your creativity really is the only limit. Not only that, but you can combine sidechain keying signals: a kick drum, say, followed by a vocal snippet, then a guitar, then a synth pulse wave. The loop of the keying signal (if, indeed, it's looped) can be of any length you choose, and you have full control over the exact timing at which the triggers occur, leading to a wealth of interesting and potentially unpredictable rhythmic diversity. And if you use another synth as your sidechain keying signal, you can even modulate that as well – modulating the modulator itself!

Another powerful source of modulation is, of course, DAW automation. Indeed, recording or drawing parameter modulation as automation offers one major advantage over sidechained modulation, in that it gives a great visual overview of the resulting movements, which is particularly useful when arranging a track, allowing precise builds and drops to be constructed with ease. What is trickier to achieve with automation, though, is the individual character you get by sidechaining one audio signal from another. Consider the complexity of the average audio waveform in contrast with the straight lines and curves that automation offers.

Ultimately, all modulation sources have their pros and cons. Sidechain processing, however, is potentially the most unusual and creative modulator of all.

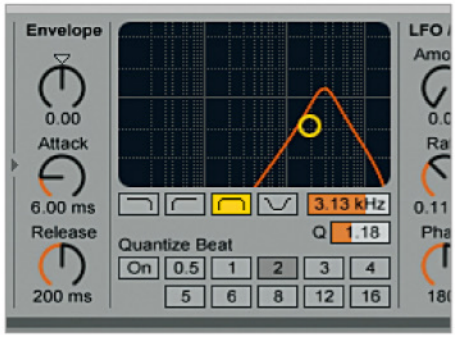
> Step by step

1. Wobbly weirdness with Auto Filter

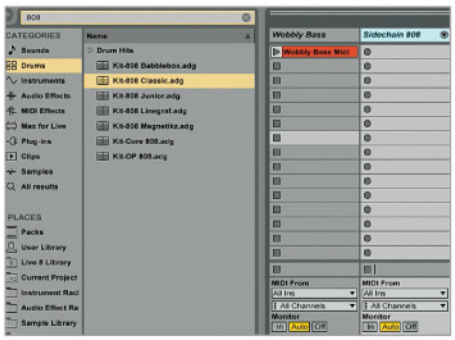


1 > Load Ableton Live's Analog synth onto a MIDI track in a new project. For the sake of organisation, rename the track 'Wobbly Bass' by right-clicking the track title bar and selecting Rename from the dropdown menu.

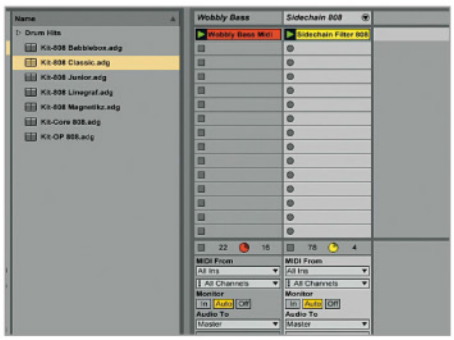
2 > We're going to program a wide, deep detuned bass, so we start by lowering Osc2's Octave setting to -1, turning on Unison and dialling in 45% of Detune. Now drag and drop the MIDI clip Wobbly Bass Midi.alc (found in the Tutorial Files folder) into a Session View clip slot on the Wobbly Bass track.



3 > Insert an Auto Filter plugin after the Analog synth. Change it to band-pass mode and set the cutoff to 3.13kHz and the Q to 1.18. Reveal Auto Filter's Sidechain panel by clicking the disclosure button on the left (that's the downwards-pointing triangle), then click the Sidechain button to activate it.



4 > We need an audio source to feed into the Auto Filter sidechain. Select the Drums category in the browser and type '808' into the search bar to find the 808 Classic kit (or any basic 808 kit will do). Drag it to the right of your Wobble Bass track to create a new MIDI track. Rename this track 'Sidechain 808'.

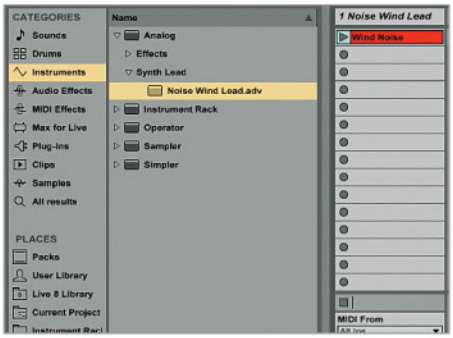


5 > Drag and drop the Sidechain Filter 808 MIDI clip (provided in the Tutorial Files folder) onto the Sidechain 808 track – this is a simple drum pattern. Return to the Auto Filter Sidechain panel and in the Audio From dropdown menu, select the Sidechain 808 track.

6 > It's important to mute the Sidechain 808 channel (by clicking its yellow channel number to turn it grey), as we only want the sound to trigger the sidechain, rather than actually be heard. Play both clips, and raise the sidechain Gain to 21.5dB and the Dry/Wet balance to 84.1%. Set the Envelope depth to -18.1 with 3.9ms Attack and 60.4ms Release.

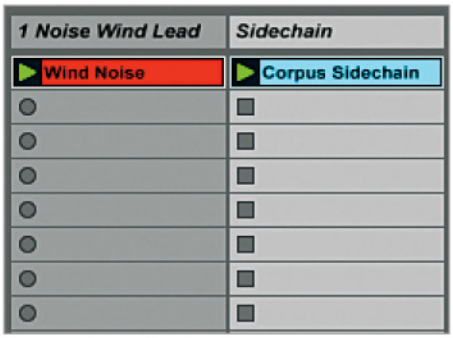
> Step by step

2. Trippy techno with Corpus' MIDI sidechain

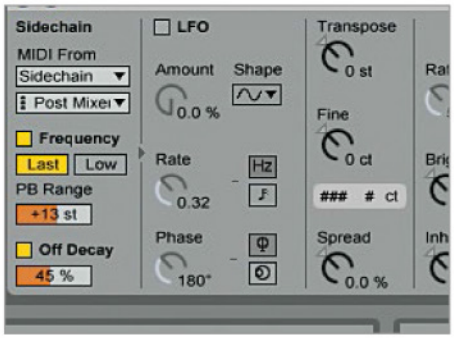


1 > Let's create a crazy bouncing techno-esque tone using a synth running through Live's Corpus effect – we'll use the latter's MIDI sidechain input to control it. Find the Analog patch Noise Wind Lead in Live's Browser and drag it into the Session View to create a new MIDI track. Next, drop the Wind Noise clip in the Tutorial Files folder onto the track.

2 > Insert the Corpus effect onto the channel, then reveal its Sidechain panel by clicking the disclosure arrow in the effect's title bar. Corpus' sidechain accepts a MIDI input, not an audio one, so create a new MIDI track – we'll be using this as our sidechain source.

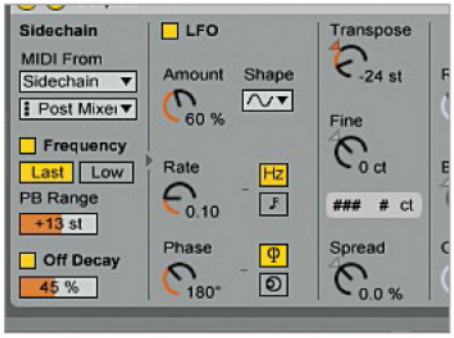


3 > Rename the MIDI track 'Sidechain' and drop the Corpus Sidechain MIDI clip provided onto one of its clip slots. It's good general practice to name tracks appropriately, and this is particularly true when sidechain sources are involved, since it's not always obvious at a glance where they're routed to or what their function is.



4 > On the Noise Wind Lead track, select the newly created Sidechain track in Corpus' MIDI From menu. Activate the sidechain's Frequency module and select Last. Set the PB (pitchbend) Range to +13, activate Off Decay and set the amount to 45%.

5 > Let's dial in a suitably wild setup in Corpus. First, change the Resonance Type from Beam to Tube, then set the Decay to 27.0 s, Radius to 60%, Transpose to -24 and Dry/Wet mix to 100% for maximum effect.



6 > Finally, let's give our sidechained bass sound a trippy edge by wobbling the pitch of Corpus with an LFO. Activate the LFO and set the Amount to 60%. Slow the Rate down 0.10 and you're done! Play the clips together and hear how the MIDI notes trigger Corpus via its sidechain – try altering the MIDI pattern to see how it changes the results.

Chain your groove

When using audio clips as your sidechaining source, their placement on the track is of paramount importance. This is because the peaks and troughs in the waveform directly affect the timing and depth of the effect, so you can't necessarily just throw any old chunk of audio in and hope for the best – your keying signal absolutely has to be shaped and positioned with the rhythm of the effect you're trying to achieve in mind. Whether that means warping, editing or even re-recording the audio part in order to get it as tight as it needs to be, this is a part of the process that demands your full attention.

While the positioning of the sidechain keying audio is an essential consideration, the placement of the gaps in between clips can be equally important, depending on the effect you're after. It's the appearance and disappearance of the keying signal that triggers and cuts off the effect, defining the groove that it generates. If an audio signal is constantly present at the sidechain input, the effect will always be triggered to some extent, potentially resulting in a "lower contrast" sound that covers less range than one where the sidechain goes from totally inactive to fully active.

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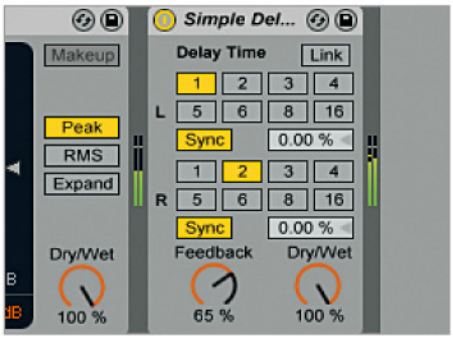
> Step by step
3. Making a creative sidechained delay

1 > Let's spice up a typical delay with sidechaining. Create a new MIDI track with an Operator synth on it and adjust the Level of Oscillator B to -20dB. Activate the Fixed button on Oscillator B to make it a multiple of Oscillator A. Set the Multiplier to 0.1 and the Frequency to 303Hz. Drop Operator arp MIDI clip (from Tutorial Files) onto the track and loop it.

2 > Insert a Compressor followed by a Delay on the A Return channel. Open Compressor's Sidechain by clicking the triangular button and activate the Sidechain. Set the Gain to 5dB, Threshold to -infdB and Ratio to 4:1. Now, whenever there is a signal present at the sidechain, the compressor will 'shut down' the signal being processed.



3 > In the Simple Delay (or Delay from Live 11), set the Delay Time for the Left channel to 1 and the Right to 2. Turn Feedback up to 65% and Dry/Wet mix to 100%. We're ready for our sidechain source, so on a new audio track, place a percussive sample – Clap-707 from Live's library – and rename it 'Sidechain Clap'.

4 > Change the sidechain input on the Compressor to the Sidechain Clap track and mute the clap track itself. Turn the A Return Send up to 0 on the Operator track to hear the effect. Experiment with adding duplicates of the clap sample in order to control the sidechain delay rhythmically and make it dance!

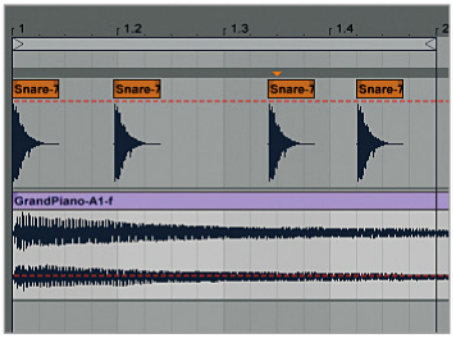
Simply sidechains

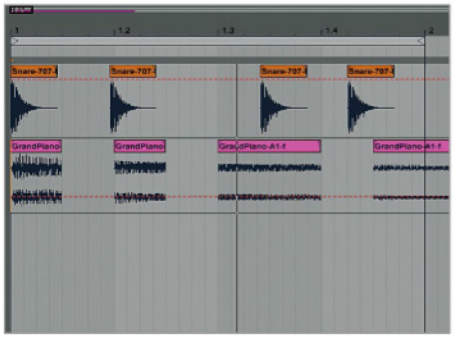
More recent versions of Ableton Live have included sidechain functionality in more devices than ever before. For instance, more effects like the Gate can now be triggered via an external audio signal, giving much more creative control.

There's more compressor flexibility, too, like the sidechain-toting Glue Compressor. The Multiband Dynamics plugin, meanwhile, boasts the ability to sidechain-compress individual frequency bands.

Of course, non-Live users needn't feel left out, as you can use many of the techniques demonstrated in this article to create your own sidechain-triggered effects plugins. It's simply a matter of placing a sidechainable compressor – if your DAW doesn't have one, there are plenty of third-party ones available – before the desired effect plugin on an effects return channel, and then routing audio into this sidechain to trigger it whilst remembering to raise the send volume on the track that you want to effect.

> Step by step
4. Using a sidechain to control a reverb effect





1 > Lay a simple snare sample out four times within a bar, as shown, and loop playback around that bar. Rename the track 'Snare Loop'. Then create an audio channel named 'Sidechain Piano' – we're using a piano sample we grabbed from Live's library, but any sample of a sustained note will do.

2 > On the A Return channel, add a Compressor followed by a Reverb. Set the Compressor sidechain up as we did in the previous tutorial, but this time keyed from the Sidechain Piano track.

3 > Raise the Send amount from Snare Loop all the way up to 0. Chop bits of the piano loop out by deleting small segments of the waveform – the reverb will jump up between the gaps due to the action of our sidechained compression.

Scarlett

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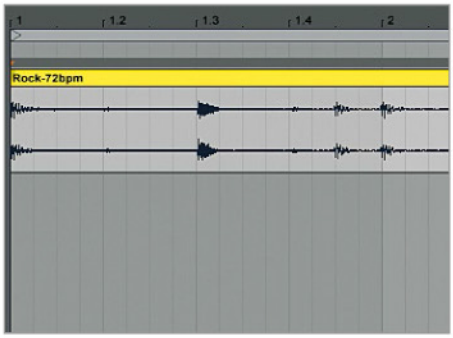
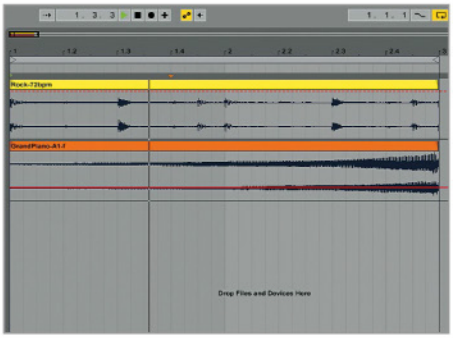
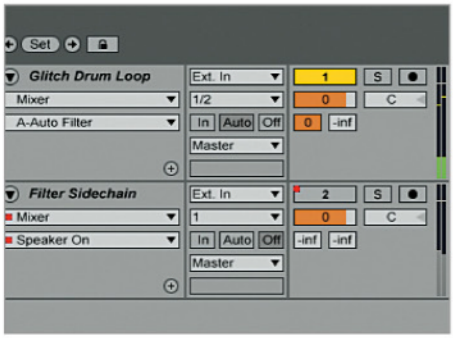
> Step by step 5. Experimental super-sidechain



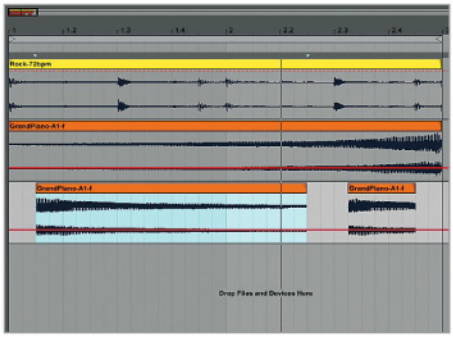
1 > In this final spectacular sidechain setup, we'll be taking all we've learnt so far and applying it to create results similar to 'effects sequencer' plugins like Glitch 2 and Effectrix, using the sidechain method to control the results. We'll start out transforming a typical drum loop into crazy glitched-out experimental drums. Drag a sampled drum loop into the arrange view to get going.



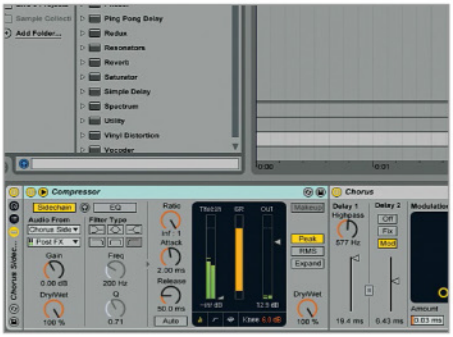
2 > We only want two bars of this loop so we'll shorten it. We'll then right-click on the loop and select the Loop Selection option in the dropdown menu. To start with a sidechain filter effect, take the single-note piano sample used in the last tutorial – or any gently decaying musical note sample of your choice – and drop it onto a track below the drum loop. Shorten this sample to two bars and reverse it.



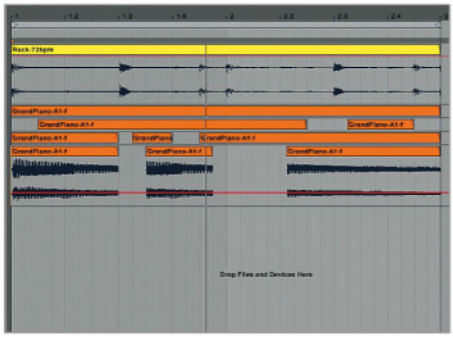
3 > Name this piano track 'Filter Sidechain'. Now add an Auto Filter on the return track, load the preset in the Tutorial Files folder and set its sidechain up to trigger from the Filter Sidechain audio. Don't forget to ensure the Send level for this send channel (A) is raised to 0 (maximum) on the drum loop channel, and that the output volume is muted on the sidechain channel.



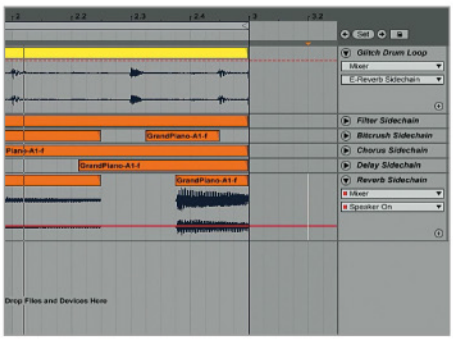
4 > Next we're going to do the same thing with the Redux bitcrusher effect – create a new audio track for the same piano sample. Instead of reversing it, we'll resize and duplicate it, cutting out parts of the clip so the sidechain opens on the first kick and the second snare of the glitch drum loop. Name the track 'Bitcrush Sidechain', mute it, and assign it as the key input to Redux.



5 > Now we'll add a different flavour of degradation using some extreme Chorus settings. Create a new return channel and drop the provided Chorus Sidechain preset onto it. Create another sidechain audio channel naming it 'Chorus Sidechain' and assign it as the key input to the compressor before the chorus. Notice how this sidechain again triggers on different drum hits.



6 > Now it's time for some dubbed-out delay to add to this already grubby loop by repeating the process in the last step. Create audio gaps in the sidechain channel, as shown. Using the delay sidechain preset, create a Delay Sidechain return channel and assign it as the key input for the compressor that feeds into the Delay.



7 > To soften the second snare and give it some space, replicate the sidechain setup process, only this time using the Sidechain Reverb preset from the Tutorial Files and spacing the reverb sidechain audio trigger channel so that there is a gap in the audio on the second snare at position 2.3.

8 > Next, we'll add some further detuned mayhem with the Flanger. This time we aren't going to create a sidechain for the Flanger – just create another return channel and insert the Flanger preset before turning up its Send amount from the drum track to full. Now you can sequence the effects just by placing snippets of audio visually on the tracks – much more immediate than automation!

9 > To enhance this drum loop harmonically, we're going to add some tube distortion. Place the Dynamic Tube plugin directly on the glitch drum audio channel and increase its output to 5dB. To push out the harmonics, turn the Drive to 10dB and crank the Envelope to 295%. Turn down the master if it's clipping and you're done! cm

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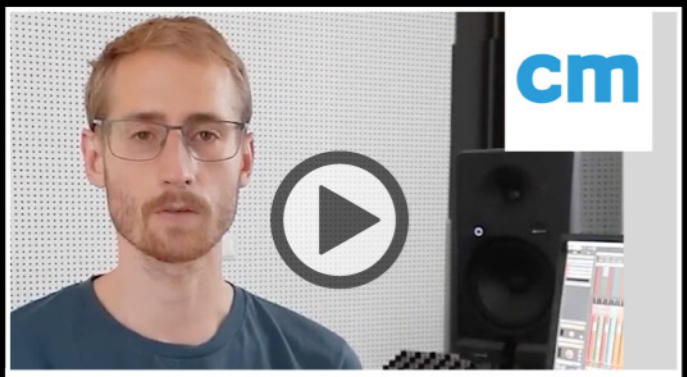

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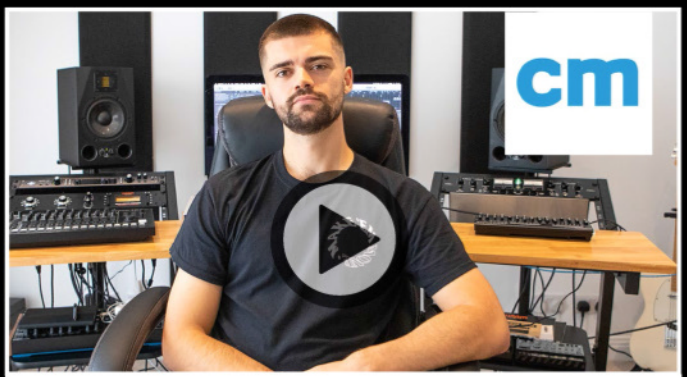

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The latest computer music gear tested and rated!

60__UA ELECTRA 88

UA calls this 1974 Rhodes 88 Suitcase emulation "indistinguishable from the real thing". Does our expert agree?

Our promise

We bring you honest, unbiased appraisals of the latest computer music products. Our experts apply the same stringent testing methods to all gear, no matter how much hype or expectation surrounds it.

What the ratings mean

1-4__A seriously flawed product that should be avoided

5___This product's problems outweigh its merits

6___A decent product that's only held back by a few flaws

7___Solid. Well worth considering

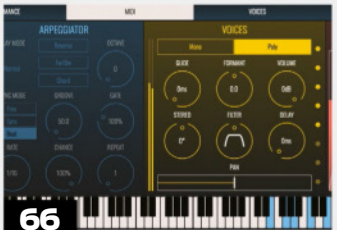
8___Very good. A well-conceived and executed product

9___Excellent. First-rate and among the best you can buy

10__Exceptional. It just doesn't get any better than this!

62 Musik Hack
Master Plan

64 Sound Dust
Plankton Drummer



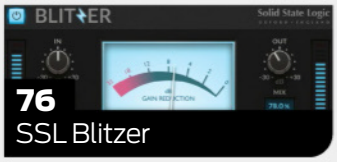
66 BLEASS
Voices

68 GForce Software
M-Tron Pro IV

70 Audio Imperia
Dolce

72 JMG Sound
Bitpunk

74 Cherry Audio
Octave Cat



76 SSL Blitzer

78 Soundware

Awarded to products that challenge existing ideas and do something entirely new

A product has to really impress us with its functionality and features to win this one

If the product exceeds expectations for its price, it will receive this gong

In the opinion of the Editor, the best product reviewed in the magazine this month

Universal Audio
Electra 88

$299 or subscription

PC MAC

Far more than just an electric piano plugin, Electra 88 delivers some of the richest classic tones ever to be emitted from **Andy Jones**' hard drive

> Universal Audio work with some of the biggest classic music gear brands to produce component-level software emulations of the highest calibre. Until earlier this year you needed UA hardware to run them, but in February UA announced three plugin bundles that ran natively in any DAW – no hardware required. Select plugins were also made available natively to buy individually and this list has been growing ever since. This all-new Electra 88 is a brand new UA instrument, and an emulation of a 1974 Rhodes Eighty Eight Suitcase Mark 1 electric piano. It also runs natively in any Mac and PC DAW, and you can buy it for £$299 or as part of a UAD Spark subscription ($19/month or $149/year) this gets you Electra 88 plus more than 30 other native UA plugins.

Electra and more

At £$299 Electra 88 is one of the more expensive UAD plugins but it's often discounted in the company's sales – it's half price as we write this. And Electra 88 is not just a piano emulation; its full title is 'Electra 88 Vintage Keyboard Studio' so it also includes studio effects, pedals and amps which can utterly transform your sound with gloriously vintage colour, dirt and flavour.

The signal setup of all of these sections flows left to right – pedals, amp and studio effects – with all the main levels controlled via the main screen. You can also focus in on each block by clicking the main UI options: Keyboard (shown above), Pedals (right), Amplifier and Studio (top right). This then opens another UI with extra parameters to tweak for each of the blocks.

Pedals, for example, open up a UI with three pedals on it and drop-down menus let you

All three amps give you a lesson in how mic positions and types really do make a sonic difference

choose from Fil-Tron or Wah for the first, or one of six options each (Chorus, Compressor, Flanger, Phaser, Spring Verb and Tape Echo) for the second and third pedals.

Suitcase full of dreams

We cover the Studio window in more depth in the box right. That leaves the Amplifier Window, which again has three options to focus in on. This time you just get to choose one amp and mic setup combination which then appears back on the main Keyboard screen. These setups really do make a big difference to the sound because you get a wide range of options with each.

The Reverb Amp (as shown left) has one mic (choose from four types), two mic positions and two speaker types; the Suitcase Preamp has one or two mics (choose from four mics) and two positions; and the 147 Power Amp has three mic setups, two mics (choose from three or four types) and two mic positions. It's clearer than that sounds when you play with them! We found the Reverb setup gave the most dramatic changes in sound, but all three give you a lesson in how mic positions and types really do make a sonic difference, and how these flexible setups allow you to make both nuanced and dramatic alterations to the presets.

Talking of which, the sounds of the piano's 100+ presets are wonderful, ranging from solid and punchy electrics to absolutely dreamy reverb-laden pianos; swirling soupy vibratos to edgy, filthy or dusty hits. And we love the fact that you can search by musical descriptions or genres. And such is the diversity – and the huge potential to create other extreme sounds by way of the amps, effects and pedals – that there is something for any musical style here. We're particularly looking forward to dropping some of the dreamy, reverb-soaked sounds onto some more ambient tracks we're working on.

We had the odd hiccup having to close the preset window to hear changes, with our processor struggling slightly, but that didn't detract from its beautiful sound. The piano and studio delivers a wonderful range and you will be creating yet more with the many options on offer. It sounds stunning, simple as that. **cm**

Web www.uaudio.com

The Pedals window delivers three pedals each of which are changeable with drop-down menus to choose alternatives

Five blocks of extras to play with in Electra 88's Studio and these add even more creative power to that supplied by the Pedal and Amplifier sections. Yep, you're not short on options here

The Electra Studio

The final right-hand main UI to open is the vintage studio which is packed full of 'gear' for you to play with. You can start with an EQ or swap this with a compressor in the signal chain. Both are tidy devices, with the compressor adding punch and colour, right up to distortion if you want, and the EQ veering into filter territory with its more extreme settings. The Modulation block allows you to get your wobble on with everything from tape-like wow and flutter to less extreme pitch effects, mild chorus or deep phaser action. All of your Leslie-style needs are here should you wish. The Delay block features some important options for the classic Rhodes sound, with Ping-Pong, Mono, Wide and Stereo defining the type while Old, New and Digital deliver the style. Which leaves the reverb, with five types adding vintage plate sounds or room options. Like the other blocks, this one alone gives you huge flexibility, and in sync with the rest, Studio is a creative dream.

Alternatively

Rhodes V8 Pro
£250
Great-sounding Rhodes and the Pro version gets you lots of effects to play with too

Spectrasonics Keyscape
£279
Emulates many a keyboard instrument with lots of Rhodes-style content (and loads more)

Verdict

For What a sound – amazing
Love the studio effects
The amps are an education and flexible
And the pedals add some real grit

Against Not cheap
One or two preset-changing hiccups

Electra 88 is a beautiful-sounding Rhodes with enough vintage gear to dirt up the sound or send it to dreamland. Much more flexible than a single instrument should be

8/10

Musik Hack
Master Plan $175

PC MAC

Adopting a one-stop shop solution for mastering, Musik Hack present their new cunning Master Plan. Did the results impress **Dave Gale**?

> Mastering can be a complicated business, especially for anyone working within the confines of their home studio, so having all of your mastering tools available in a single plugin has to be enticing? Music Hack's latest plugin hopes to provide just that. Its stated aim is to reside on the backend of your DAW's output, soaking up a number of mastering processes in a single instance. All the mastering components are presented in a simple format, which could change the way that you approach mastering in the DAW.

Musik Hack encourages you to remove any additional plugins from the master bus, before activating Master Plan. Once you load the plugin, it is pretty easy to see why that is; in spite of its relatively small and petite working area, there is a surprisingly large amount of content to call upon, to make radical improvements to your track.

Don't mention the war

You can't miss the large pot, which is located centrally, adorning the legend Loud. Interestingly, Musik Hack states, "We do not endorse Loudness Wars... But you will win!". It's effectively a Limiter, which is designed to maximise loudness, while maintaining clarity at all times. In use, the elevated results are obvious, although it is easy to push things to distortion. Guidance is offered on the best way to approach the use of the limiter, and upon refinement, works incredibly well. There's also association with other favoured mastering tools that really bring the punch.

In the upper-most corners of the plugin, pots control signal input and post-plugin output. The input level plays a pretty significant role in the Loud function's behaviour. To the middle-left of the plugin, Low and High pots subtly control tone, which also play their part on the outputted signal, from the limiter circuit. While the temptation would be to drive the plugin to a frenzy, lower levels of engagement do sound incredibly musical.

Completing the pot lineup, a Wide control induces stereo depth; this feels quite subtle, but through a process of A/B audition, you can hear

At the backend of a DAW's output, it soaks up a number of mastering processes in a single instance

the improvement very clearly. It's not overtly obvious from the fascia, but clicking the legend below each pot will defeat the effect, making it easy to A/B the effected signal.

Keep calm and saturate

Along the bottom of the plugin window are a host of attractive elements. It'd be well worth your while to audition these in isolation, as they all have much to offer. As an example, the Thick button induces an analogue-inspired saturation, while the Clean and Calm buttons help to de-clutter the low and high ends respectively. In all of these cases, activation reveals a small fader, which can be used to dictate the amount of applied effect.

The Multi button reveals a 3-band multi-compressor; a really useful tool in any mastering scenario, while the Tape button adds classic analogue tape emulation, tightening bass frequencies and adding subtle high-end saturation, along the way.

Master Plan is quite a surprising plugin; it garners an enormous amount of impressive sonic power in a relatively small package, in fact that's one of the minor gripes that we have with it. The interface is not resizable, and while it's arguably more about the sound than the graphics, a slightly larger working area would be very welcome.

The lowest portion of the plugin provides essential information, such as LUFS (Loudness Units Full Scale) and peak values. There are also presets and defaults to get you going. The darkness of the interface can also make it difficult to view, especially through its small scale, but there is a setting to alter the GUI to a white interface, which is easier to view. But what really matters is the absolute sonic punch of the plugin in this regard Master Plan is a hugely impressive modern mastering tool. **cm**

Web www.musikhack.com
Info $75 for a one-year subscription

It's the Master Plan; everything you're likely to need in a single mastering plugin

Master Plan offers a range of playback for common uses

Playback auditioning

Master Plan is packed full of some superb mastering facilities, but one intriguing function relates to the auditioning of your mix and master in different scenarios. If preparing your work to be played to the public, via the usual streaming platforms, think how useful it'd be to gauge how your track will respond in these settings. That's the exact facility that Master Plan offers through a number of playback filters designed to emulate various playback settings. Located on the right of the plugin window, you can choose a Mono filter, which is very useful for checking back mono-mix phase cancellation, with debatably the most useful provision labelled Phone. Most of us will have to listen to music through our phones from time to time, so this facility is incredibly useful for mastering in the modern age. By offering this option, Musik Hack make it all too easy to adjust your mastered mix to accommodate all platforms in one, and that's very useful indeed!

Alternatively

iZotope Ozone 10 Standard
$249
A large number of useful mastering plugins, with the ability to upgrade to the Advanced edition later

Zynaptiq Intensity
$359
Has the capacity to tighten up and broaden your mastered track, with a minimum of fuss

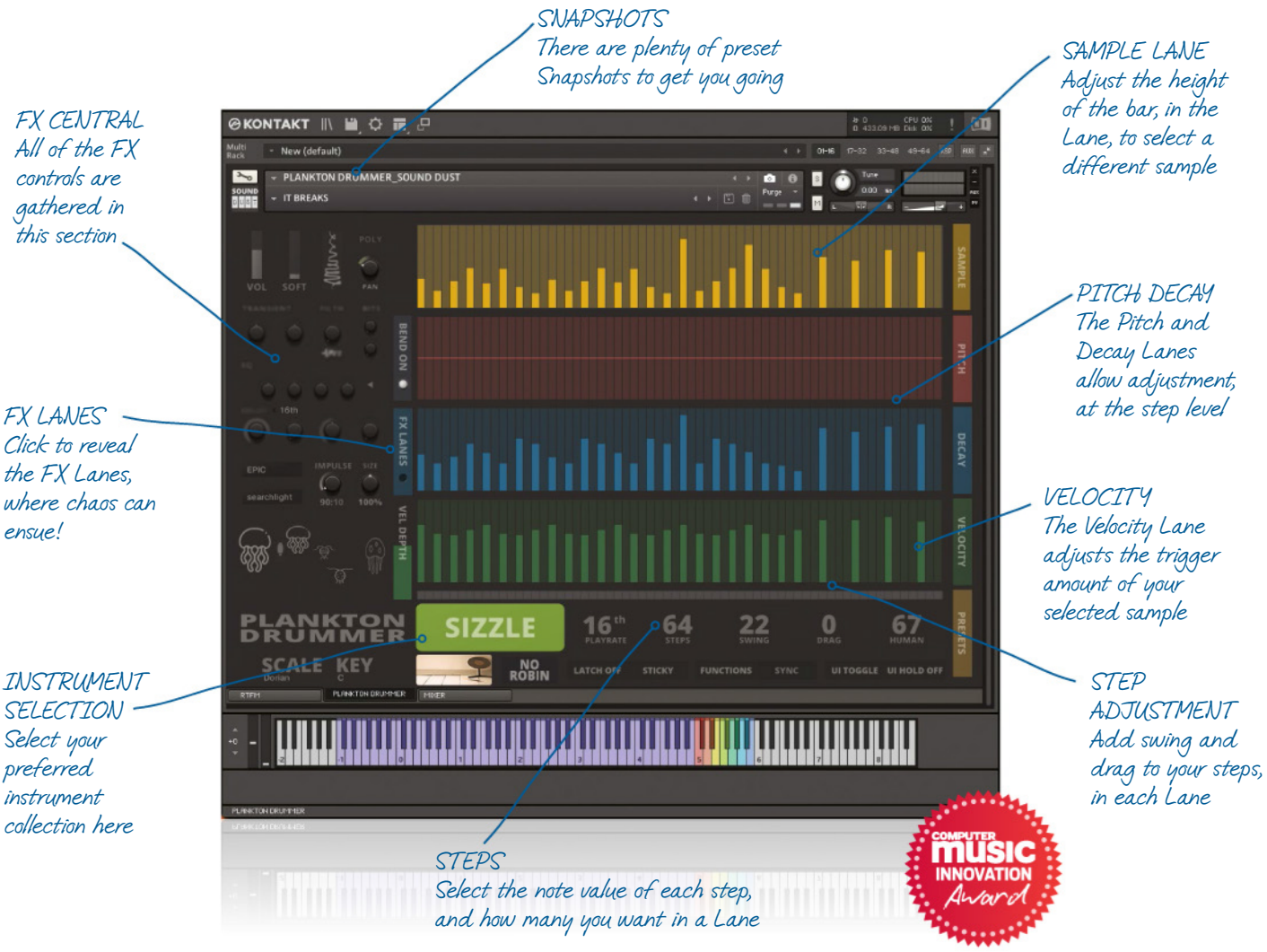
Verdict

For Control over effect amounts at all possible stages
The Limiter is impressive, and aggressive if so desired
Monitoring filter will prove a hit

Against Effect muting isn't obvious
Graphics could be clearer and larger

Nervous about mastering? Master Plan has plenty of controllable content to make home mastering a reality for all

9/10



Sound Dust
Plankton Drummer

£60 PC MAC

Sound Dust's new Kontakt instrument blurs the waves between percussion and harmony. But is it sea-worthy? Cap'n **Dave Gale** sets sail

> Pendle Poucher is the musical and creative force behind Sound Dust. As a successful media composer, in his own right, his music embraces tradition and quirkiness in equal measure, which might explain the stance of many of his software instruments.

They call him the Wanderer

The basic concept of Plankton Drummer begins with a bunch of superbly captured drum samples, drawn from acoustic and electronic sources. These even include a couple of drum machines owned by Orbital. The samples are then organised into a fairly traditional triggering layout: on a keyboard, C is the kick, E is the snare, and so on. These traditional instrument names don't put in an appearance though, in favour of onomatopoeic interpretations, so kicks are described as 'Boom' and snares as 'Smack'. The drum sound concept has been extended considerably, so while there are basic drum elements, the fun really begins when you start to play around with them within the Plankton environment.

There are 72 drum instruments, made up from more than 3000 samples, all of which are tuned. While you can access these for more conventional DAW-based sequencing over the majority of the keyboard layout, Plankton's strength lay within its capacity to program lanes. These behave much like a DAW-based step editor, but with the ability to trigger each instrument's lane on the fly.

Stay in Lane

The lanes are triggered from the upper part of a controller keyboard, between notes C5 and C6, at which point any programmed steps play out in sync with your DAW's tempo. There are a number of preset snapshots to get you going, but the fun really starts as you begin to assemble your own lane constructs.

While there are basic drum elements, the fun really begins when you start to play around with them

We begin our programming using the default patch described as 'A Blank Canvas', using the upper-most lane labeled as sample. Each lane provides a step-based bar graph, with the height of each step in the sample lane selecting a different sample, so you're not so much triggering one sample as choosing which sample you wish to play on a specific step. Moreover, you can assign the number of required steps in a lane, from 1 to 64. The only problem with this, as we discovered, is that with longer sequence lengths, it becomes very difficult to establish which beat of the bar is where. Hence, we reduced the number of steps in the sample lane to something a shade more manageable, such as eight or 16 steps.

The Velocity Lane works in conjunction with the Sample Lane, allowing you to dictate the force of the matching trigger.

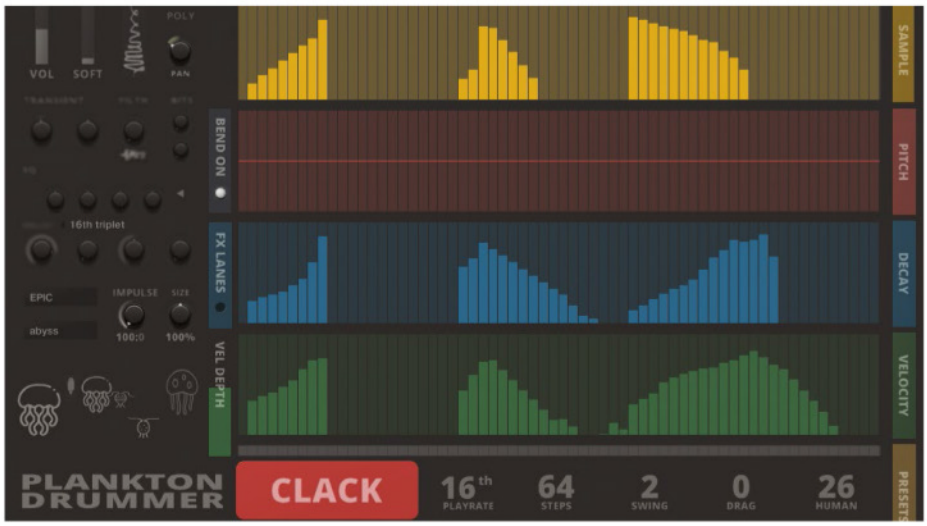
Harmonically effected

The harmony angle kicks in with a dedicated Lane that allows the altering of pitch relating to the sample. All samples are as close to the note C as a drum sound will allow, meaning you can create melodic patterns within the Pitch Lane.

This is all very manageable, but it's the fully assignable FX lanes where you can create the most extraordinary effects. Armed with reverb, delay, distortion, bit depth control, and loads more, all of these elements can be programmed into an FX Lane. This means that the most amazing sequential effects can be created, ranging from gating through to completely unimaginable chaos!

It's very rare to find a drum package with such a wide remit, with such capacity for extraordinary creativity. Underneath the Kontakt exterior lies one of the most creative drum products that we've encountered. It's perfect for more basic duties, but its brilliance really shines bright as you begin to explore its hidden depths. **cm**

Web www.sound-dust.com



The highly programmable lane-levels of Plankton Drummer

Pick your sample selections, including many of the classics

Sonic collective

If there were ever a product that was all the better due to its sum of parts, Plankton Drummer could be it, but we must take a moment to consider the raw sonic power it brings. There are some very recognisable numbers within each sound's menu. 808 and 909 make a number of appearances, as does CR-78, but alongside the Roland classics, Nord drums appear, as does the moniker DFAM from Moog. There's also plenty of processing and modular activity, but it's important to remember that within each menu category, there are a host of sounds that you effectively select from the Sample Lane. That doesn't account for the endless possibilities available, either for subtle altering as each sample triggers, through pitch and decay adjustment, while liberally adding copious amounts of effects, at the step and Lane level. That's quite a sonic makeup for an instrument which invites creative thinking (alongside the many happy accidents it can bring).

Alternatively

UVI Drum Designer
€149
A powerful, punchy set of commercial and minimal drums sounds, with on-board sequencer

Xfer Records Nerve
$199
A more conventional drum machine-style product, with tools for adapting sounds in realtime

Verdict

For Unique, versatile instrument
The source samples are a wonderful blend of abstract and mainstream
Instances can be altered at the step level
FX Lanes invites amazing sonic textures

Against A bit of a learning curve
Lanes do not offer bar or beat numbers

Plankton Drummer pushes the concept of a Kontakt instrument to its furthest creative reaches. A very special product

10/10

BLEASS Voices $69

PC MAC iOS

BLEASS's latest allows you the ability to create exciting and complex harmonies with ease. **Stuart Adams** channels his inner choir master

Despite its initial focus having been more directed towards developing apps and AUv3 plugins for iOS devices, French developer BLEASS has now firmly established itself in the desktop arena too, with all of its wares available for both desktop – and iOS – based users. A new addition to this burgeoning collection is BLEASS Voices, which is a powerful and flexible 12-voice harmoniser.

Intelligent transposition

As a harmoniser, Voices is of course heavily geared towards use with vocals, but its ability to generate up to 12 independent harmonies from a single monophonic input, and to even output each harmony line through its own mix bus, ensures the plugin is useful in many other scenarios and contexts. The inclusion of a super low-latency Real Time processing mode adds to this flexibility, making Voices a good choice for those needing to use it for live guitar and synth harmonisation too.

Four of Voices' harmonised lines are created based on the pitch of the input signal, with the pitch detector recognising frequencies between 66Hz and 5.2kHz. Each of these harmony lines can apply a pitch shift of +/- 12 semitones to the source signal, but the absence of fine tuning adjustment makes Voices less useful for automatic double tracking than it otherwise would be. In addition, each harmony line can be switched to Flatten mode, forcing the incoming signal to a selected pitch.

Whether transposing or fixing the pitch, each voice can have its formant frequency shifted, can have a delay and stereo spread applied, can be filtered through a band-pass filter, and have its pan position set. Fixed transpositions of this kind can be a bit clumsy, and prone to

We've praised the BLEASS design before... they really do know how to create a corker of a UI

generating harmonies that fall outside of the desired key and scale, but Voices sorts this out with an intelligent pitch corrector. This can be applied to the transposed voices on a per-voice basis, and can also be applied globally to the remaining set of eight voices (which we'll be getting to in just a moment). Although it's undeniably a useful feature, the corrector only offers basic major, minor and pentatonic scales for you to work with – you can work around this a little bit if you have strong music theory knowledge, but a wider choice of scales would have been a preferable solution.

A choral synthesiser?

Users can generate up to eight additional voices based on incoming MIDI notes. These voices have the same selection of tweaks to formant, delay, etc, but these adjustments are applied globally to all MIDI-generated voices. On top of all that, the plugin features an arpeggiator that can be used to trigger the MIDI-generated voices, and those voices are also fed through an ADSR envelope, triggered by the MIDI notes, that shapes a harmony line's dynamics.

Throw in the plugin's modulation abilities (see boxout for more on this particular subject) and Voices starts to give the strong impression of being a synthesiser as well as a harmoniser. This impression is made all the stronger by BLEASS' instantly recognisable interface design, with all of Voices' modulators looking exactly like their counterparts that are found in BLEASS' products. We've praised the trademark BLEASS design before, delivering as it does a perfect balance between parameter control and visual feedback, and here we are doing it again: these guys really do know how to create a corker of a user interface!

It's important to keep in mind the distinction between BLEASS Voices' harmonisation remit and the functionality offered by a pitch correction tool sitting in the same bracket as, for example, Auto-Tune. Voices can correct pitch, by virtue of its pitch quantiser, but that's not the name of the game in this situation. Rather, BLEASS Voices will equip you with a powerful yet easy-to-use (not to mention easy-to-process) toolset with which to create some extremely detailed harmony lines and to satisfy everyone's inner choir master. **cm**

Web www.bleass.com

With so many modulation sources and destinations, BLEASS Voices has a flavour of synth to it

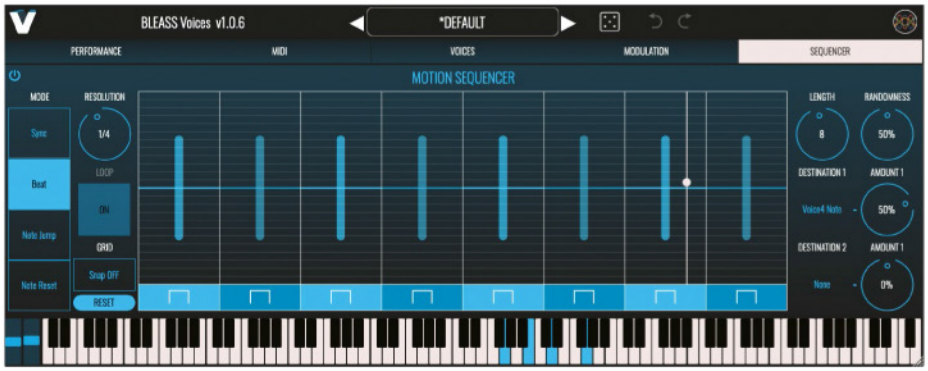
Synth-style modulators

The inclusion of an arpeggiator and ADSR envelope lends Voices a synth flavour. This impression is strengthened by the presence of various performance and realtime modulation sources, and over 60 destination parameters (the exact number depends on the source).

On the performance side of things, Voices recognises mod wheel, note on velocity, note off velocity and keyboard tracking. The plugin also recognises MPE Slide and MPE Pressure, the latter falling back to standard MIDI channel aftertouch in the absence of an MPE-capable controller. A whole page of the interface is dedicated to setting the response curves for these incoming controllers, and for mapping each to up-to two destination parameters.

Realtime modulators are provided in the form of a pair of BLEASS' advanced LFOs that allow complex waveforms to be created, an envelope follower that responds to the dynamics of the incoming signal, and a step sequencer that pumps out a repeating pattern of control curves and values.

As with the performance controllers, each of these modulators can be mapped to any two of the plugin's 65 modulation destinations.



Eight MIDI-driven voices combine with four parametric harmony lines for a total of 12 voices

Alternatively

Antares Harmony Engine
$289 (or via subscription)
Brings Antares' advanced vocal manipulation tech to a harmoniser

Waves Harmony
$149
Eight harmony voices and three different workflows make a very capable modern plugin harmoniser

Verdict

For Intelligent pitch correction keeps harmonies within key and scale

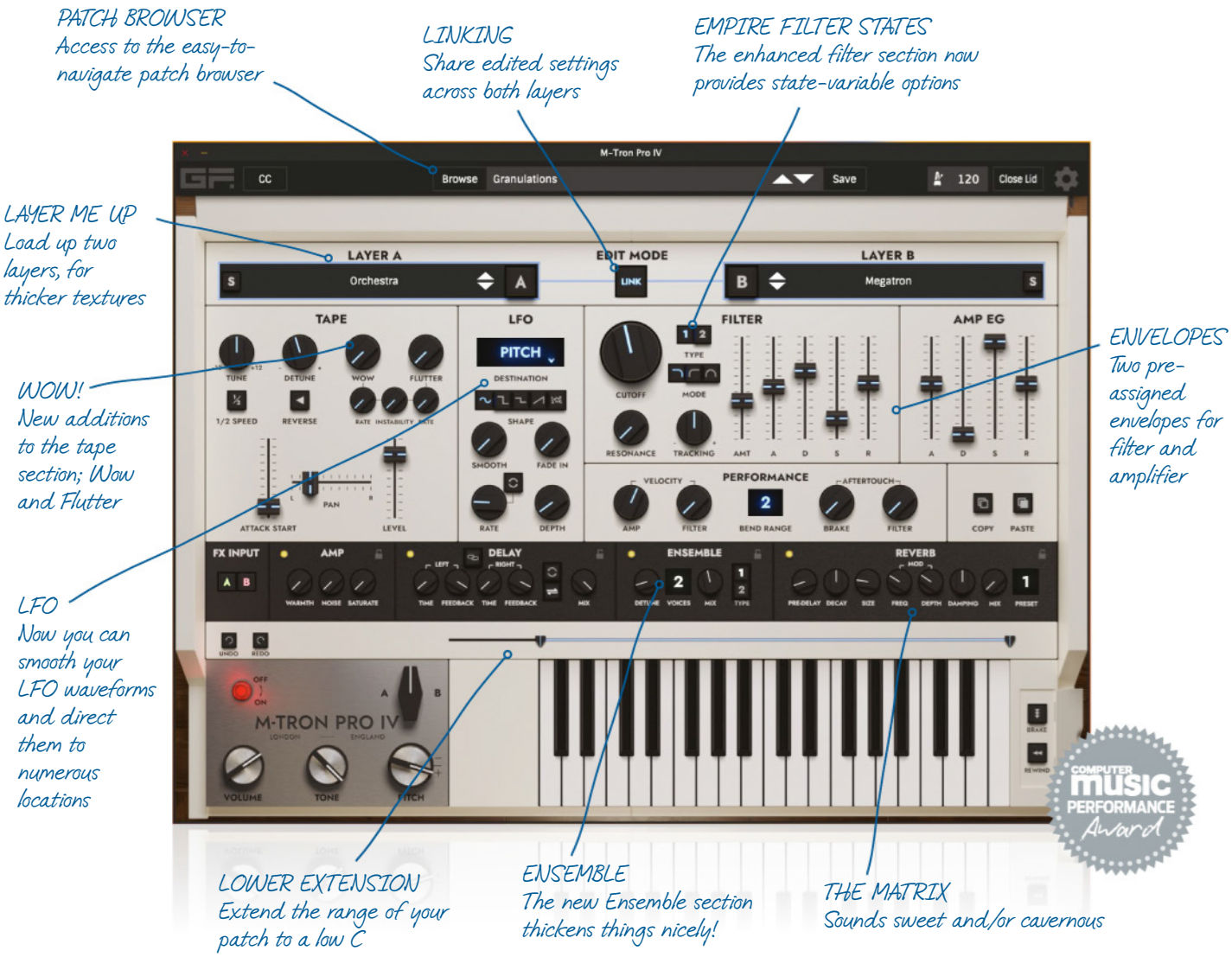
Synth-style performance and realtime modulation sources

Can enable independent per-voice output busses

Against Lack of fine tuning control means not so good for ADT

BLEASS Voices allows you to indulge your choral needs with rich and complex harmonies that are simple to create

8/10



GForce Software

PC MAC

M-Tron Pro IV £149.99

With an update to an established icon, GForce make the case for the tape-based arts (albeit in software form). **Dave Gale** scrubs in

> The word 'legendary' is far too easily thrown around these days, especially with regard to vintage synthesisers. But the Mellotron has no issues with holding that legendary status. It's regarded as the first useable sampler, employing analogue tapes instead of digital tech! Based on the M400, the M-Tron Pro from GForce software has become as iconic in software form as the original instrument. Now in its version IV guise, this update maintains all of the classic elements, while adding new patches, samples and a host of new features.

Anyone updating will feel instantly at home, as the GUI maintains the same operational approach. There are two layers, described as A and B, which host a different sample. Each layer can exploit its own set of edited parameters, or you can use the Link button, to quickly and easily apply any edits to both layers. Ported from previous versions, editable parameters include a resonant filter, which has now been enhanced to offer low, high and band-pass modes, and two ADSR envelope generators which are hardwired to the filter and amplifier.

From here on, there are a host of new features which augment control. Firstly, the initial samples/tape banks, receive a boost. The basic M-Tron Pro IV suite ships with over 3.5GB of factory samples, which includes more than 800 patches, curated by programmers and recording artists. There are some wonderful surprises here, such as the Isolation Choirs. Apart from literal choirs en masse, there are also samples, demonstrating the vocal talents of the likes of Matt Berry and Alex Ball.

All-out tape

One possible criticism that could be levelled at previous versions of M-Tron is that the plugin may sound a little too good, depending on the quality of the originally sampled tapes. The newly enhanced Tape section now offers Wow and Flutter controls, complete with a level of instability that can be applied to taste. The rate of wow and flutter can also be controlled,

Literal choirs aside, there are also samples with vocals from the likes of Matt Berry and Alex Ball

providing a degree of consistent degradation, and can be taken to relative extremes. The half-speed and reverse functions are also great for extending the tape notion further.

The LFO section has also received an update, and has now been equipped with five wave-shapes, which can be further controlled using smoothing and fade-in. When coupled with the existing rate and depth control, there is now capacity for taking M-Tron to new places, through the ability to set the LFO destination to pitch, filter, pan or level.

New edition additions

The instrument GUI is now fully resizeable, which is a nice touch and it is also possible to extend the bottom sample range down to a low C. This extends the lower sample, proving to be both useful and creative. At the playing level, M-Tron IV also responds to polyphonic aftertouch and velocity, which is set within the performance area of the plugin.

The output of the M-Tron Pro IV is still routed through a series of effects, but with new additions. We now have an amplifier simulator, adding warmth and saturation, along with an ensemble effect. However, the biggest enhancement relates to the New Matrix Reverb, which provides a beautiful back-end reverb, extending to black-hole proportions.

Changing tapes

The quality of M-Tron IV Pro continues to sound reassuringly expensive. The initial samples themselves sound stunningly beautiful, even without editing and effect application. The diversity and choice across the samples remains incredibly high, allowing the use of the substantial patch library, or ability to get very creative from the partial level upwards.

The included additions and improvements make this a very worthwhile upgrade, while anyone jumping in for the first time will doubtless get lost in so many classic sounds, which sound incredibly familiar. **cm**

Web www.gforcesoftware.com
Info Upgrade price from previous versions £29.99+VAT

The 2-layer makeup of the M-Tron Pro IV; familiar, but considerably enhanced!

The large factory patch-list included with the M-Tron Pro IV

Expanding the tapes

The unavoidable popularity of this plugin has influenced artists and productions considerably, over the last 15 years or so. Thanks to the inclusion of so many original gems from the Mellotron library, individual sounds and patches have featured heavily in many musical settings. The rhythm section elements, which are included with the M-Tron Pro factory patch-set have in some cases provided the backbone to complete tracks. Notable users extend from the pure pop of Caro Emerald, through to the moody electronica of Röyksopp. GForce have encapsulated the Mellotron concept, into a brilliant piece of software, which is accompanied by a vast library of additional and associated original tapes. These can be purchased and added to your M-Tron plugin at any time, but it may also be worth considering the expanded 'Complete' edition (£333+VAT) which will catapult your source sample content to a very grandiose 11.3 GB.

Alternatively

Arturia Mellotron V
£149
Arturia's take on the Mellotron also allows user samples, coupled with some useful back-end effects

UVI Mello
€99
The perfect production-ready package, that operates from within UVI's own Workstation plugin

Verdict

For Engaging and easy-to-use interface
Packed full of excellent sampled content – some very familiar!
Matrix Reverb is a huge improvement
Even the basic enhancements are useful

Against Worth considering the 'Complete' bundle – which costs more!

A case of an excellent existing plugin that's been improved through a lot of small enhancements to improve it hugely

10/10

Audio Imperia
Dolce $499 PC MAC

Audio Imperia bring us a package of chamber-sized strings, inspired by a golden Hollywood age. Who said romance is dead, asks **Dave Gale**?

> If there is one word which we've liberally applied to Audio Imperia releases in the past, it is 'epic'. Known for its superbly-styled cinematic sounds, Audio Imperia has garnered a reputation for classy orchestral and cinematic sounds, which gravitate to a large canvas.

In a no less welcome change of direction, Dolce is a library which has been collaboratively created between Audio Imperia, and Jasper Blunk from Performance Samples. Stacking up to a sizeable 80GB of samples, Dolce endorses a smaller orchestral footprint, concentrating exclusively on strings. The sampling gathers 21 players, with the 1st Violins comprising seven players, down to three players in each of the cello and double bass sections.

The emphasis within Dolce is centred around expression; this is evident through a subtle amount of vibrato, which infiltrates much of the library's sustained components. This is more obvious in certain places than others, with the marcato or pizzicato patches exhibiting a non-existent vibrato quota. There is a healthy contingent of articulations across-the-board, encompassing sustained samples (in both open and con sordino iterations), spiccato and marcato, tremolo and trills. There is however a lack of keyswitching options, relying on the user to create multiple articulation instances within Kontakt themselves.

Classic to modern

Audio Imperia has always done its utmost to make it easy to find the orchestral sound that you require, and that principle continues in Dolce. Switching from the Basic tab, to Advanced, you gain access to more parameters. Dynamic timbral control is provided through the usual modulation wheel, while expression is available at the channel level. There is no ability to control vibrato, but this never feels overbearing. Arguably, the intensity of the

The emphasis is centred around expression, evident through a subtle amount of vibrato

vibrato increases with the dynamic volume, with a minimum of fuss.

The other control element, at the sonic level, relates to either a Classic or a Modern mix. Within the Basic tab, a simple see-saw fader glides between close and distant miking, while clicking the Advanced tab releases access to four mic faders, ranging from close to ambient signal paths. The acoustic captured within Dolce is relatively dry, in keeping with the best cinematic studio traditions, but the on-board reverb engine will allow the signal to be sweetened further through reverb if required.

In play-mode

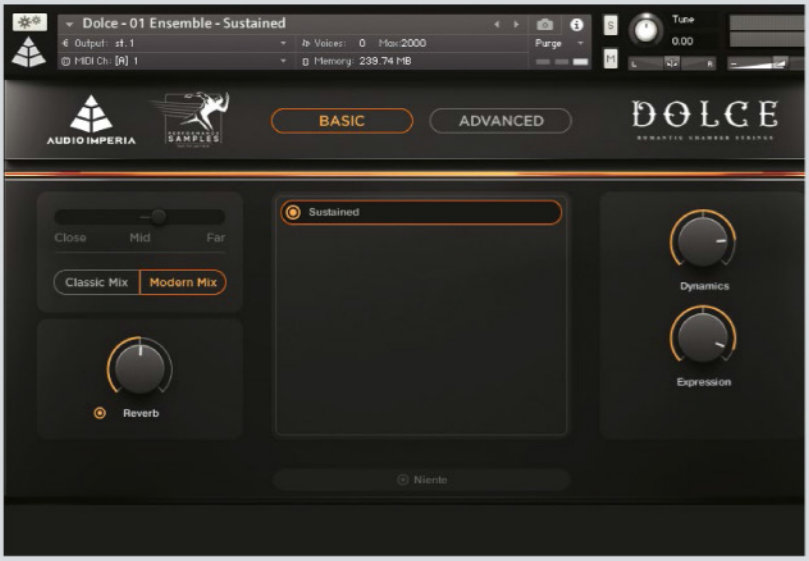
Apart from the individual instrument articulations, ensemble patching is also included, which is always helpful when sketching out initial ideas. Other Audio Imperia libraries employ the Sample Start pot, which allows the user to dial back the amount of latency when playing. This is also present here, but only available on shorter articulations. As a consequence, there is some latency in legato mode, but it's not overly significant. Without latency, the legato effect would be underwhelming, so it's all about balance.

In use, Dolce rewards across the board, with an intimacy in the sonic make up, which can ramp-up dynamically when required. The ability to switch between modern and classic mixes has always been a boon, and that continues to be the case here. This is not about one mix being superior to the other, but firmly about placement within an existing track. The modern mix lends itself superbly to commercial tracking, while the classic mix is just that!

Dolce's inspiration is drawn from the Golden Age of Hollywood, but elements such as the amount of vibrato deployment, have been tempered to keep the library usable in a contemporary setting. The samples themselves are superb, with plenty of round robins available on the shorter articulations where you need them. It's an ideal partner to Audio Imperia's other packages, broadening its appeal across all string sectors. **cm**

Web www.audioimperia.com

The Basic view; highly usable and ideal to get composing quickly



Dialing in Legato mode is a shortcut to a Golden Age feel

Smaller dynamic scoring

You'd be forgiven for wondering why you might use smaller string forces in your track. Dolce's unique selling point, stems from its use of a chamber-sized ensemble. This is the classical term given to ensembles which are smaller in size. Having said that, having 21 string players is hardly petite. By using a smaller number of players, you tend to get a greater degree of purity in the sound that you hear. Due to the arrangement of the section within a relatively dry room, it affords the opportunity to capture the close-up sound of the bow on the string. This does not mean that the resultant signal is quieter, as you always have the option to increase the volume of the plugin, but it does mean that purity transcends in your track. One result is a string section that could cut through a mix, in a contemporary or commercial setting. Meanwhile, in certain cinematic scoring scenarios, smaller forces of strings, as used by Hollywood composers such as Thomas Newman, are always very much in demand for narrative scoring.

Alternatively

Spitfire Chamber Strings
£649
Recorded at Air studios, Chamber Strings remains one of the classiest string packages around

Orchestral Tools Peteris Vasks Strings €549
Offers incredible detail and exceptional legatos, albeit with considerable latency

Verdict

For Beautiful, dynamic collection
Extensive range of articulations
Ensemble patching is always useful
Very easy to use on many levels

Against No keyswitch patching

Dolce is the perfect contrast to the larger libraries currently available. Its purity and expression is exemplary, and incredibly appealing for a number of different production settings

9/10

JMG Sound Bitpunk €79

PC MAC

Bitpunk offers the means to craft crunchy bit reduction, or glitched-out sonic destruction. Our resident hellraiser **Rex Johnson** gets brutal...

> Digital distortion is often seen as a cold, less attractive process next to warmer-sounding analogue saturation and overdrive. However, JMG Audio's Bitpunk plugin gives you nuanced control over the digital degradation effect, turning harsh distortion into artful trash. It gives you two source channels and lets you swap bits from one to the other for characterful bitcrush fuzz, or out-and-out glitch destruction.

The main signal comes in through source A, and then you can choose from several options for source B. These include Input (the same as A), Invert (which is the input inverted), Mute (for bit-muting effects akin to bit crushing), and finally sidechain where you can blend in a different signal. You're then presented with a large dial in the centre that can be used to morph each of the 16 bits between the two channels. This is handily represented by 16 lights that transition from green to red or vice versa as you turn the dial.

As the order of the bits makes quite a big difference to the sound of the effect, you have options for transitioning with serial, odd, even, dual, or quad selections, and you can go up or down. It sounds a little complicated, but the excellent GUI with its satisfying, circuitboard aesthetic makes it easy to follow what's going on. If you prefer to be a bit more specific, you can switch to Grid mode, where you can toggle any of the 16 bits between each channel, and there's also a Randomise button to mix up the selection. It's worth spending some time in this mode as it helps you to get accustomed to the sonic information that each bit covers.

Gain confidence

One thing to note is that the volume can vary greatly as soon as you start manipulating the

Make no mistake, Bitpunk is not for the faint of heart and its forte lies at the hard end of digital glitch

bits. To help with this, there's an Auto Bit Gain button, which is actually an auto gain algorithm that works on each individual bit to help smooth the overall volume. This definitely helps to keep things under control, but it also changes the sound somewhat, as it makes the balance going to the output a little different. As such, it might have been useful to also have a more traditional auto gain on the main output volume, which could keep things more predictable. Thankfully, there's a hard clipper that can be switched on and off to save things going too wild, and it can also be driven for additional saturation.

As mentioned, Bitpunk is surprisingly versatile and can create nuanced, gritty sounds. With the B source set to Input, both channels are the same, so flipping bits won't make any difference. However, to help add some variation, both channels have several controls and effects to subtly tweak or mangle the audio, with greater differences resulting in more extreme sound design when the bits are switched. There are controls for bit depth reduction, lo-fi pitch shifting, HP and LP filters, volume, pan, and an Error dial for random stuttering and skipping plus a syncable delay with feedback control. Even if you use these effects without swapping any bits, you can get some characterful arcade sounds or lo-fi delay effects.

A bit of rough

Once you do start on the bits though, things get very dirty, very quickly. As such, you might find the need to use the Dry/Wet control to help tame the harshness and mix the distorted and dry signals. Although you can get some more subtle delays and sizzling excitation, make no mistake, Bitpunk is not for the faint of heart and its forte lies at the hard end of digital glitch and noise production. It could be used to add unique crunch to drums, guitars, synths and vocals to give them an upfront edge in a range of genres. It can be a little unpredictable to program, but there are plenty of excellent presets that give a broader sense of what can be achieved. **cm**

Web www.unitedplugins.com

Grid Mode offers an alternative way to flip the individual bits

The output features include a hard-clipper to be used as a safety net for when things get loud

Additional functions

Outside of the main bit-mangling effects, Bitpunk has a few useful extras including one-knob compression and soft-clipping saturation effects on the main output, plus low and high pass filters. These are useful for taming aggressive digital harshness when you want to then use the dry/wet control to blend distorted and dry signals. You also have an intelligent randomisation function for the entire plugin, A/B switching, undo/redo, a resizable GUI and up to 8x oversampling. There's also a welcome sleep on silence function that reduces down CPU usage when the plugin is not receiving any audio. The only thing we missed is some sort of modulation option like an LFO or two that could be assigned to the main dial or other effect. Granted, it'd make the plugin a bit more complicated, but sweeping any number of the controls can create some really interesting movement and effects, so it feels like a missed opportunity. Thankfully, you can automate all parameters, including switching individual bits, so there's still fun to be had.

Alternatively

MeldaProduction MBitFun
Free
This free plugin lets you flip, invert and mute bits, and even use a sidechain input signal like BitPunk

Arturia Dist ColdFire
€99
A comprehensive distortion plugin with multiple distortion types and modulation options

Verdict

For
- Brutal sound and nuanced controls
- Well-programmed and varied presets
- Sidechain input can lead to unique sounds

Against
- A little on the unpredictable side when programming
- Volume can jump abruptly
- No built-in modulation

A bit unpredictable, but a ferocious digital degradation effect with some fun controls to help you get creative

8/10

Cherry Audio
Octave Cat $69 PC MAC

Emulating a key '70s synth scene disruptor, Cherry Audio's new creation adopts feline tendencies. **Dave Gale** takes a prowl...

> Octave Electronics would perhaps not be the first company that might trip off the tongue when considering the early synth classics of the '70s. Borne out of a desire to offer synthesisers to the masses, at a price point that individuals could afford, the Cat was its flagship monophonic machine.

In many respects, Cherry Audio is continuing this tradition, offering a considerable lineup of classics, both recognisable and lesser known, in a desirable format that won't break the bank. We've been blown away by their recent offerings, but what does this particular Cat bring to the basket?

The original Cat was a duophonic machine; equipped with two oscillators, its mono operation could be split, assigning each VCO to a voice, while continuing to adopt single envelope and amplifier operation. This shares duophonic kinship with the ARP Odyssey, which provided similar functionality. Being as it is a software clone, Cherry Audio have extended this operation, while maintaining the behavioural elements that would have been provided by the limitations of duophony.

In monophonic mode, the Cat exhibits resounding character. The emulation of the 4-pole/24dB filter is exemplary. It provides a degree of reminiscent wispiness, but make no bones about it, the Octave Cat punches considerably in the bottom end (although there is the recognisable drop in lower frequency content once resonance is increased to its upper echelons). The resonance was always a particularly distinctive feature of the Cat, which has been superbly resurrected in detail, along with all other elements, right down to the envelope behaviour.

The Poly Duo

Cherry Audio have added a wealth of features to the Cat's functionality, beginning with a vast

True to the character and concept of the original, while extending its operational quota

extension of its monophonic credentials. Apart from its previously mentioned duophonic behaviour, it's possible to extend the number of voices in steps, up to a full complement of 16, turning the Cat into a characterful polysynth. However, it is also possible to remain in mono mode and utilise Unison. As the increasing voice count relates to voices rather than VCOs, the output can become wonderfully raucous, pretty quickly. When you factor in the ability to blend waveforms within the VCO section, including a sub oscillator at each VCO level, that's a ton of wave content to be compiled, so the logical Unison Detune fader allows you to dial in the amount of Super-wave detuning you would like. It's less Cat and more Euro at this level, but it's a very welcome feature.

The VCO and VCF sections also provide a large degree of modulation possibilities, drawn from many of the usual suspects; syncable LFO with sample & hold, two envelope generators (ADSR & AR) and syncable oscillators.

Top cat

Moving away from the original, there is a very welcome FX and Sequencer page, which provides some excellent capacity for extending patch creation. The Distortion effect does help to re-engage the bottom end, if you drive the filter resonance, but its character is also flexible for screaming lead patches, without resonant extension. There are also phaser, flanger/chorus, echo and reverb effects, all of which go way beyond the norms of quality that you might expect within a synth plugin.

Meanwhile, an 8-step, analogue-style sequencer can be routed toward oscillators, filter or VCA. We had an incredible amount of fun with this feature, yielding some excellent results when placed within a DAW's workflow.

The hidden depths of the FX/Seq page

Cherry Audio's take on the Cat is stylish; it's true to the character and concept of the original, while extending its operational quota by some margin, providing an engaging synth which is simple on some levels, but has capacity to go further when desired. The Octave Cat is the most tip-top! **cm**

Web www.cherryaudio.com

Zoom right in, using Cherry Audio's familiar Focus mode

All mod(ulation) cons

Modulation is the key to creating interesting synth patches that exhibit character and develop over time. The Octave Cat placed a considerable number of modulation options right at the heart of its oscillator and filter sections. As a consequence, things can get chaotic very quickly, particularly if using the LFO or sample & hold features. Provided as part of the added extras list, the 8-step sequencer is a hugely usable feature. Equipped with two rows of virtual CV pots, you can direct a modulating influence to either (or both) of the VCO sections, the filter cutoff or the amplifier. This immediately creates huge potential for synth-pop or electronic-style percussive loops, which can also be latched on the keyboard. It additionally means that you can program pure bass-lines, with the ability to re-trigger or remain passive on each step, while the pot-quantise function will easily switch to a chromatic step format, for ease of note programming.

Alternatively

Syntronik Instruments CATO
£49
Uses sampled content, for an exceptional facsimile with the spirit of the original

Sonic Couture The Attic 2
£179
Features 18 similar curios from the vintage age of synths. Full of character and charm

Verdict

For
- A truly superb reincarnation of a lesser-known classic
- The GUI is a joy to use
- Unison and Polyphonic functions are fab
- The Sequencer/FX page is cool indeed!
- Unbelievably cost effective

Against
- Scratching our heads here!

Another superb emulation from Cherry Audio, capturing the Cat's essence, plus a ton of scope beyond the original's remit

10/10

Solid State Logic Blitzer £96

PC MAC

SSL's latest plugin delivers a variety of classic compressor colours, but can it match dedicated emulations? **Jon Musgrave** finds out...

> Many SSL hardware compressors are already available in fantastic plugin emulations. But the company has also developed further compressor plugins from the ground up like X-Comp and X-valvecomp. That continues with its latest addition, Blitzer. A 'compressor with attitude', it looks conceptually similar to Empirical Labs Distressor. It aims to deliver everything from soft, saturating compression right up to brick wall limiting, and combines regular compression controls with dedicated Drive and Transient-shaping processors. Nevertheless, one-knob-style controls coupled with a clear layout and dedicated gain reduction meter keep things easy to understand. Throw in a few convenient extras like output wet/dry mix, output Auto Gain, oversampling mode (HQ), undo/redo, context-sensitive tool tips, and a very well spec'd sidechain EQ section (see box out) and you get a great combination of sonic flavours all in one easy to use plugin.

Get in the spirit

Fundamental to Blitzer are the distinctive knee shapes found in analogue compressors and this creates many different attack and release profiles and threshold offsets. These are baked into the Ratio and Blitz! mode settings, providing 10 unique behaviours. Look closely and you'll spot that these start with a 1:1 no compression setting. This adds a tiny amount of 3rd harmonic distortion and is ideal for warming up sounds. Then moving up the ratio dial you'll find wide parabolic knee shapes with a very gentle response followed by easy slope options with a narrower knee. At 10:1 and 20:1 you get two opto-inspired modes that closely emulate the non-linearities of these classic hardware designs. Rounding things off, Blitz! mode

Fundamental to Blitzer are the distinctive knee shapes found in analogue compressors

delivers an aggressive brick-wall-style limiting effect, with attack and release characteristics based on the classic 1176 all buttons mode.

Smash it up

Despite the name, Blitzer is very good at reasonably transparent compression duties, and bread 'n' butter tasks like vocals, bass, sub mixes and mix bus. However, it's the tougher stuff that grabbed our attention. For example, both opto settings deliver that squashy pumping compression that's great for adding energy to drums. Meanwhile Blitz! mode goes further, adding colour to pretty much anything you throw at it.

Of course, compression is only part of the story, with the Drive and Transient processors providing further flavours. On the analyser we found Drive added primarily odd harmonic distortions, with some even harmonics creeping in at higher settings. Its behaviour was also somewhat linked to the selected ratio. Either way, the effect moves from subtle saturation right up to trashy fuzziness at the aptly labelled setting 11. Transient meanwhile introduces a slower initial attack for sharp transients, creating a form of overshoot. Unsurprisingly we found this most obvious when using faster attack settings, as it allows you to wind some transient back into the mix. This works well across the ratio settings but is particularly effective in Blitz! mode and is ideal for drums, allowing you to enjoy the ambience-enhancing compression and keep your beats crisp.

Blitzer is clearly a plugin with a purpose and we like where it's coming from. The powerful sidechain coupled with tone and transient-shaping aspects achieve way more than a simple hardware emulation and bring everything into a simple clear interface. So, if you're open to a multi-function creative plugin and are bored of your existing hardware emulations, this could be what you need. **cm**

Web www.solidstatelogic.com

Blitzer's tool tips help make the plugin learning curve clear and quick

The internal side chain includes extensive modification options

Would you like a side with that?

Many plugin compressors include sidechain tailoring, but the complexity on offer varies a lot. Blitzer includes both a dedicated high pass filter (up to 2kHz) and a single parametric EQ band. Decent frequency range (100Hz to 10kHz), adjustable bandwidth and powerful gain (+/- 36dB) mean you can achieve a multitude of frequency-conscious compression styles. With gain cut and boost both available you can approach things in various ways. A powerful cut in the upper frequencies, say, de-emphasises these in the side chain, resulting in the mid to lower range getting more compression. Meanwhile adding a sharp narrow boost in the sibilance region turns Blitzer into a respectable de-esser. The only negative is there's no way to bypass the onboard sidechain EQ section so you can assess if it's benefitting the compression outcome. Still, it's great to see a powerful sidechain section incorporated in this flexible, flavour-packed compressor.

Alternatively

SKnote Disto
$50
This affordable emulation extends its capabilities with four different core-processing algorithms

UA EL8 Distressor Compressor
£299
UAD's emulation of this analogue classic includes the renowned Nuke setting

Verdict

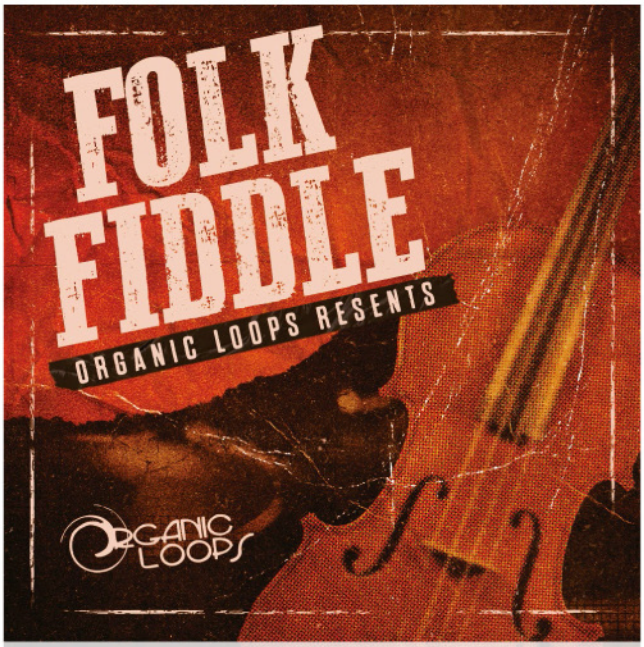
For Impressive choice of compression styles on offer
Powerful sidechain options
Excellent transient tailoring feature

Against No way to bypass the sidechain EQ

Blitzer is both powerful and easy to use and one of the best new compressor plugins we've seen in some time

9/10

Soundware round-up



Organic Loops

Folk Fiddle £29.95

Bust the top on this enchanting assortment of fine picking and playing, and you'll be warmed to the very cockles. Be it high-spirted pant-swingers for the Cèilidh crew, or closing-time pub melodies to get a little misty eyed to. There's something for everyone that gets the feels from that old timey party music.

The character of every instrument has been captured, with all the bowing and strumming full of life. From the headlining fiddle itself, to a plethora of plucked violins, violas, mandolins and more, get the folk up! It's fiddling time.

www.loopmasters.com

8/10

Beatport Sounds

Afro House £19.95

The Kemet Soul Records crew are the bods behind this sunshine selection of superb Afro house grooves and instrumentation. The London-based label has been turning out some cracking releases of late from the likes of El Deep and Dave Anthony. And fans of that far-flung funk will be chuffed with the sounds on show in these infectious and flavourful loops and one shots.

Stripped back drums, dynamic vocals, and big and bashy basslines are first to prick the ears. With some electrifying keys and synths next to impress. Sure to stir a fire inside..

sounds.loopcloud.com

7/10

Bingoshakerz

Organic Jazzy Downtempo 2 $20.95

Ten fully-loaded construction kits for hip cat producers to pick through. Try out the sexy sax honks and wails – see if you dig. Or, run those digits through the lounged out synths and keys. There's plenty to lower your shades and peek at, with all the brass, drums and bass in these slick kits more than capable of holding court in the coolest of clubs.

There's 1.3GB of music in total to wander through, but with grooves as smooth as these, there really is no urgency. Just drag, drop. And relax.

www.bingoshakerz.com

8/10

Mode Audio

Open Sky £20

Super-chilled set of guitar loops, riffs, chords, and tailed off sounds to furnish your lo-fi and downtempo beats with. There's head-nod bass playing to ponder, alongside the main body of electric guitar sounds in this 185 file deep set.

Tempos cruise around 70-96bpm, with some fine vintage Fenders picked and strummed. The results come clean, muted, and harmonised, and can take lead duties, or sit pretty on backup. Also included are full beat drum kits and hits, noise textures and percussion patterns, to help gel it all together.

www.modeaudio.com

7/10

Sound Ghost

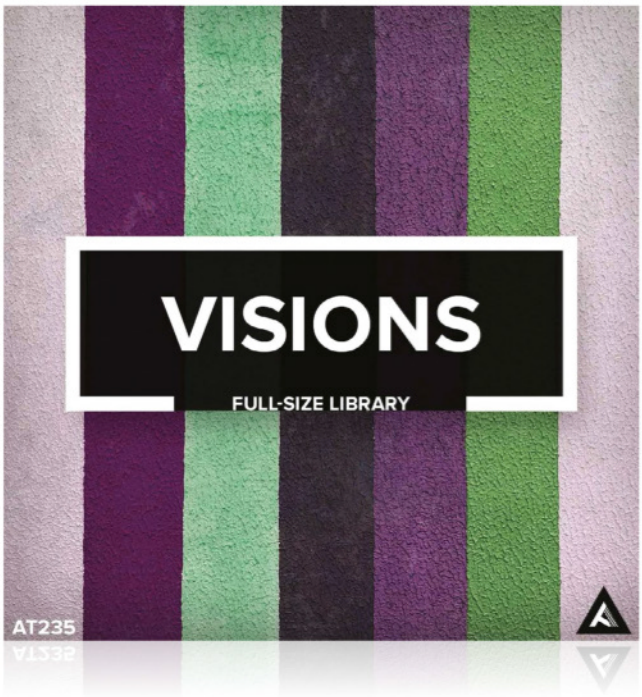
Bliss £16

A hundred drones, usable over any tempo – from tranquil and textured, to uplifting and epic. Each blissed-out swathe of sound has been layered and mixed with care to provide depth and definition to your tracks.

Loop your listeners where you like across your beats, forever cycling in their own sweet angelic way, or to add smooth transitional movement to builds and drops. Whatever you need blissed-out atmospheric pads and tones for, you'll find a serviceable sample tucked away in here.

www.soundghost.net

7/10



Audiotent

Visions £45

Who's behind this, then? Word around the sample pack campfire is that it's an artist with "numerous releases on the Innervisions label". Who are we thinking? Dixon? Âme? The results are strong enough to stand up to anything on the imprint, so you never know.

It's stocked with a full-colour sonic palette of heavy grooves and hypnotic rhythms, with all of the 120bpm beats and basslines wrought from a groaning shelf of cherry-picked drum machines and other highly favoured analogue gear. Great sounds. Time to pass them off as your own. *Shh*.

www.audiotent.com

9/10

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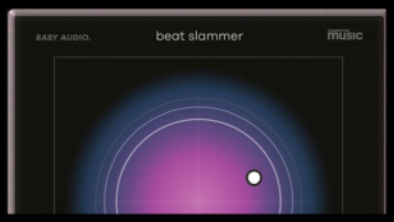


cm/free plugin

82 **BABY AUDIO BEAT SLAMMER**

Our tutorial and video explains how to use this month's all-new CM plugin

cm/free samples

88 **TECHNO AND HORROR!**

This month we've got brand new classic techno elements and a pack for crafting horror and tension

cm/free videos

93 **MASTERCLASSES**

This month, our experts show you how to concoct modern tape strings and how to apply short delays to your mix, via their respective videos

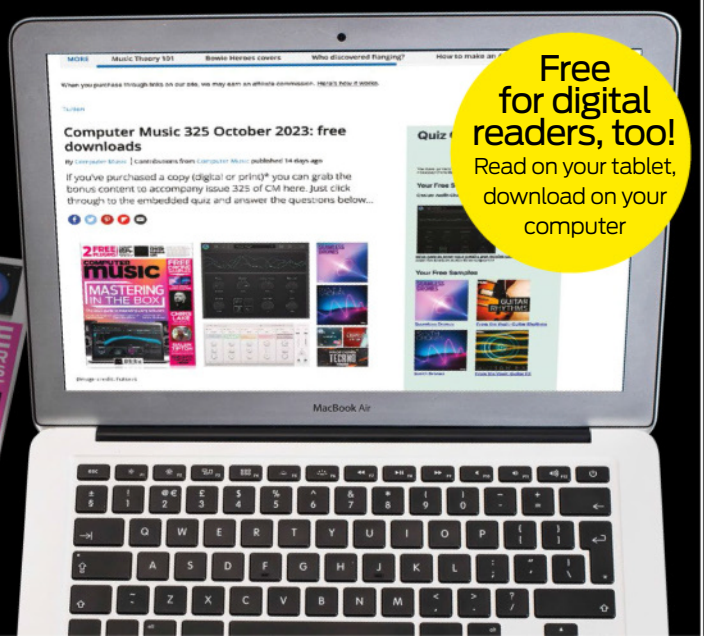
cm/plugin suite

DL **THE cmPLUGIN SUITE**

An in-depth guide to all of the plugins in our mighty collection can be found as a PDF alongside the download files

Head to bit.ly/cm327downloads

Visit our new-look downloads page for instant access to our plugins, samples, videos and files



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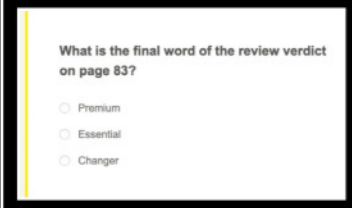

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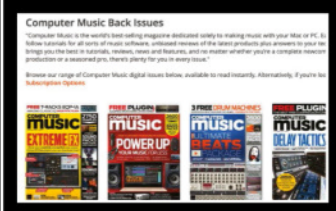


03 If you enjoyed that issue, you can still purchase our back issues via **bit.ly/pocketmags-cm** and downloads for those will be kept at **filesilo.co.uk/computermusic**

BABY AUDIO BEAT SLAMMER

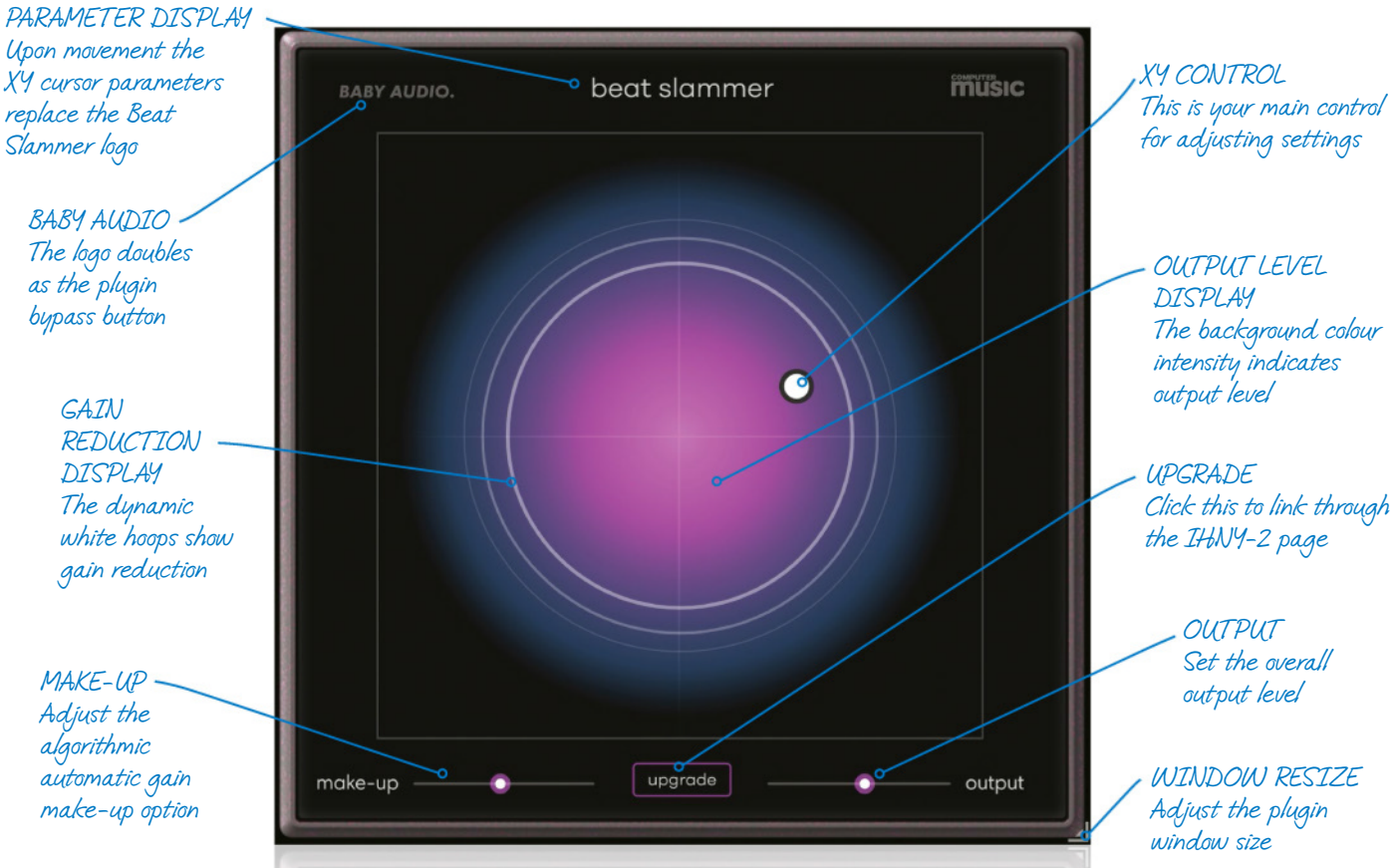
Everyone loves slamming beats and this month's giveaway is the perfect tool for adding instant weight to the energy of your track

> This month we're very excited to bring you a new addition to the CM Suite. Beat Slammer is a new beats-and-drum-focused compression plugin from developer Baby Audio, and is yours for free with this issue.

Baby Audio is a developer with an increasingly significant portfolio that includes excellent creative processors such as Smooth Operator intelligent signal balancer, Crystalline reverb, BA-1 analogue modelled synth and TAIP, the AI-powered tape simulator. They also have a decent selection of one-knob-style freebies, if you want to just try them for size. Anyone who likes parallel compression will have spotted their original I Heart NY plugin and its latest version, IHNY-2, takes simple, powerful parallel compression to the next level. It's IHNY-2 that forms the basis for Beat Slammer, and although the colours are slightly different and the advanced parameters removed, Beat Slammer retains the same engine, operational simplicity and mojo of IHNY-2 (which retails at $79).

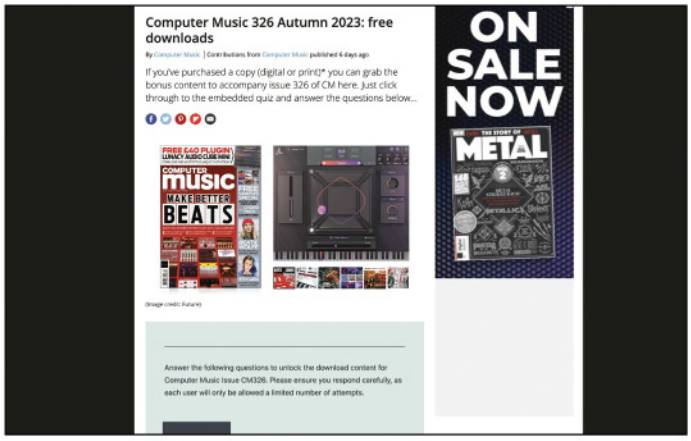
This tutorial will show you how to claim, download and install your free copy of Beat Slammer. We'll then familiarise ourselves with the key aspects of the interface and move onto a detailed look at the display. This is an important aspect of Beat Slammer and not only combines the key parameters in a simple XY pad format, but also shows you what's happening via the innovative real time graphics. Then it's on to the important bit: trying the plugin on various sounds. Here, we've pulled the usual suspects from the beats library and will show you how to get a variety of effects.

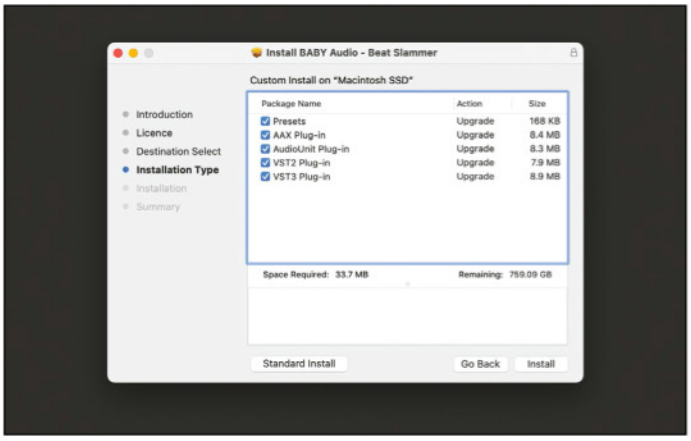
Finally, as mentioned Beat Slammer is based on IHNY-2, so if you like what you hear and want to upgrade, why not head over to **www.babyaud.io** for more info.



Download the accompanying video and the MIDI/audio files at **bit.ly/cm327downloads**

> Step by step 1. Installation

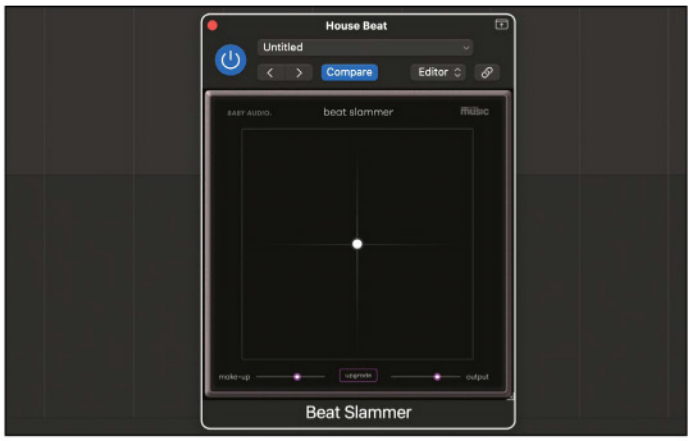


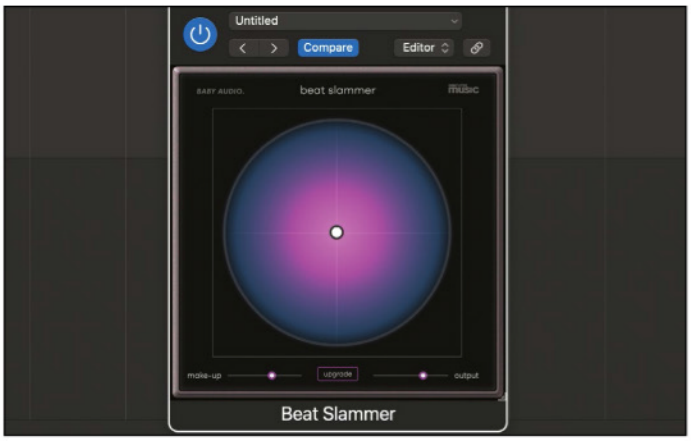


1 > To get started, head over to this month's content download page: www.bit.ly/cm327downloads. With the current issue to hand, start the quiz. Once you've gained access to the issue, follow the instructions and click the download link for Beat Slammer.

2 > Run the correct installer for your platform and choose the required formats if available (VST, VST 3, AU and AAX). Beat Slammer requires no serial number or further authorisation, so you simply need to launch your DAW and once scanned, your new plugin should load.

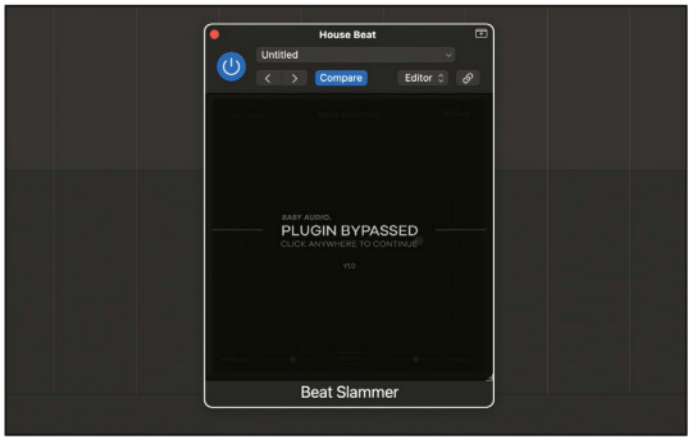
> Step by step 2. Familiarisation

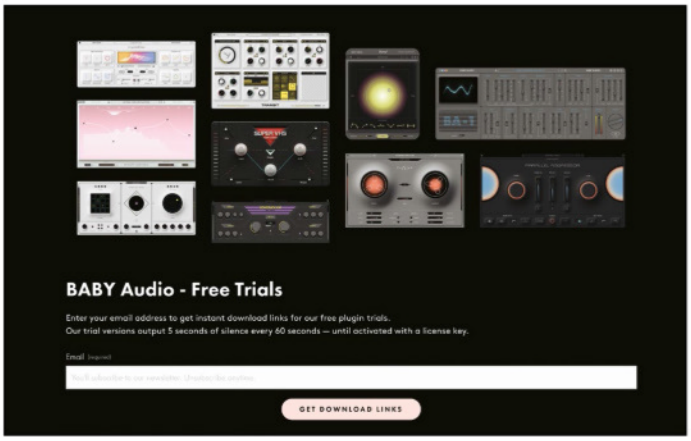




1 > When you first load up an instance of Beat Slammer, with no audio playing, you'll be presented with a blank screen with a dot in the middle. This doesn't give too much away, but in essence you set the main compression settings by dragging the dot around the XY pad.

2 > Play some audio through the plugin and you'll see the XY pad has a pink/purple/blue target-style animated background. This responds to the signal level at the output and also indicates gain reduction, and we'll look at this in more detail in the first main walkthrough.

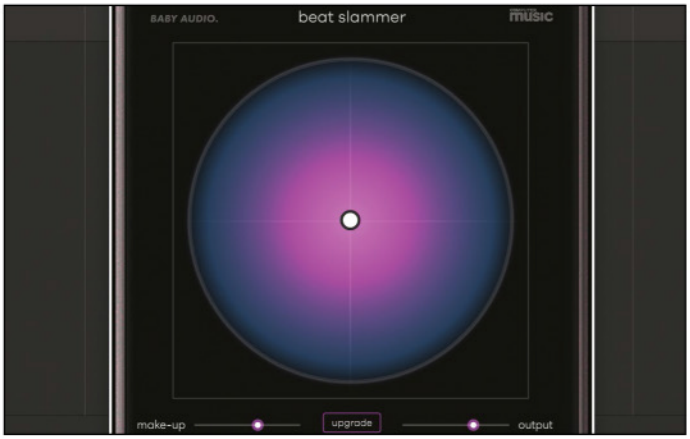




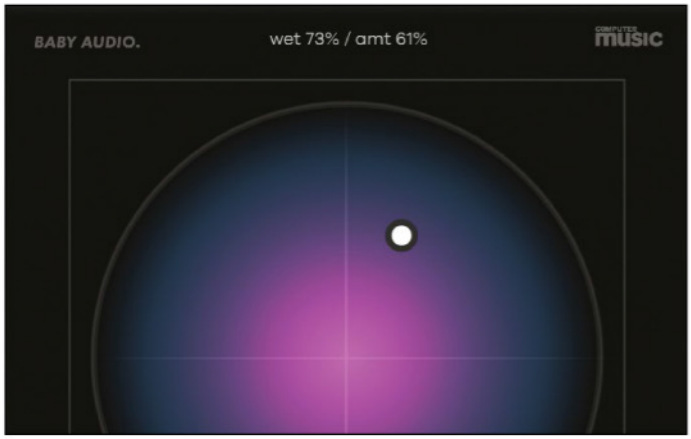
3 > Around the edge of the XY display are three further controls. Starting in the top left, the Baby Audio logo is a bypass switch and once active, clicking on the screen deactivates it. Meanwhile, bottom right is the output level and bottom left the gain make-up, the behaviour of which we'll cover in the walkthroughs.

4 > Finally, there's an upgrade button in the middle at the bottom. If you click on this it will open a link to the Baby Audio website, taking you direct to the IHNY-2 page. Here you'll find various options including straight up and bundled purchase pricing and also download links for free trials.

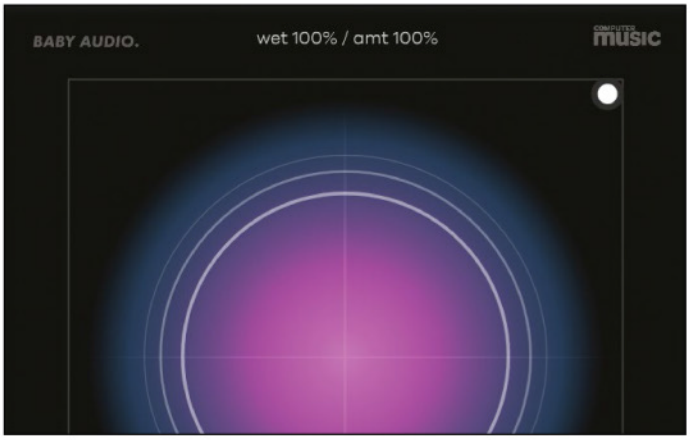
> Step by step 3. Understanding the display



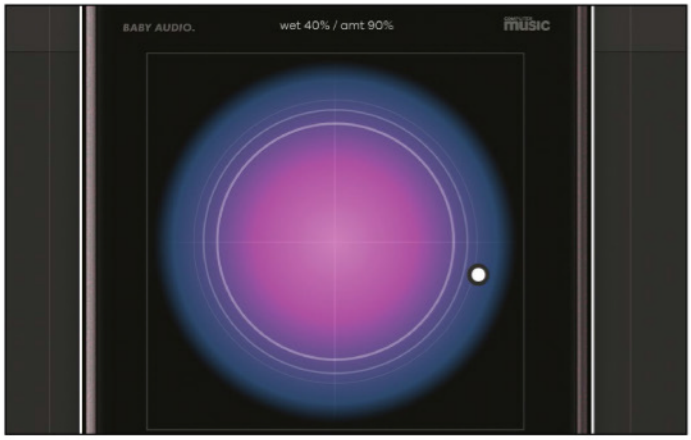
1 > Beat Slammer is very easy to use and you can, if you like, simply drag the cursor around the XY pad until you get the result you want. Even so, having an understanding of what the display is showing you will help you get better results, so let's start by running through how it works.



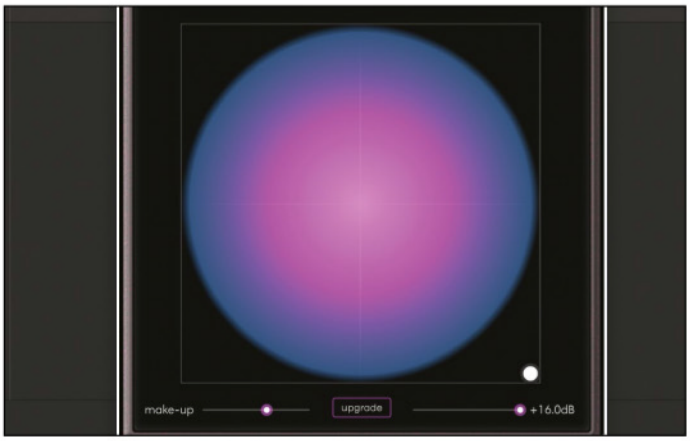
2 > To get started, we've loaded up a beat loop and an instance of Beat Slammer as an insert. The first thing to note is that the cursor for the XY pad offers feedback on its position and these parameters will appear temporarily when you move the cursor instead of the Beat Slammer title at the top.



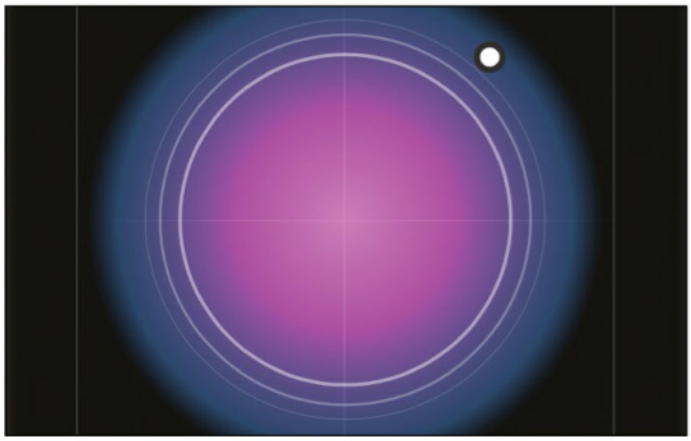
3 > The X axis controls the processing amount (0 to 100%) and the Y axis the processing wet/dry mix (0 top 100%). If you move the cursor to the top-right corner, you'll get the maximum deepest effect, and to the bottom-left, no effect at all. Double-click the cursor to return to central default (50/50).



4 > Now try setting up some compression. Remember, Beat Slammer is designed as a parallel compressor so you can go for a more extreme effect, but then dial back the mix to taste. Here we've set the amount quite high (90%), but then brought the blend right down to 40% for a more moderate effect.

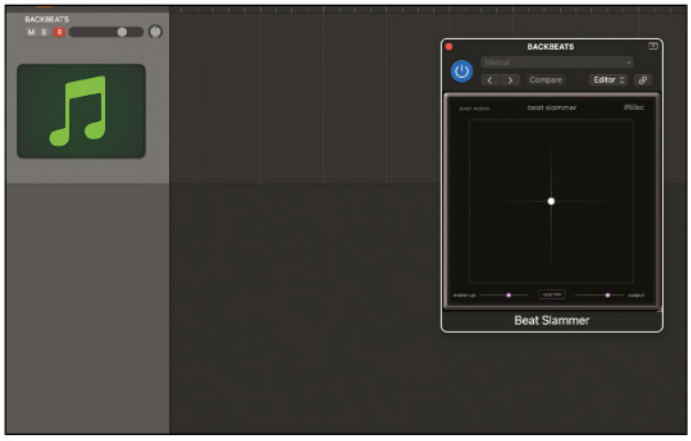


5 > As mentioned, the animated background of the XY pad display shows levels. The first thing to see is that the coloured circle blends from pink to blue and that as the level increases, so does the colour intensity. Try turning up the output level, and you'll see that at very high levels the circle is brighter.

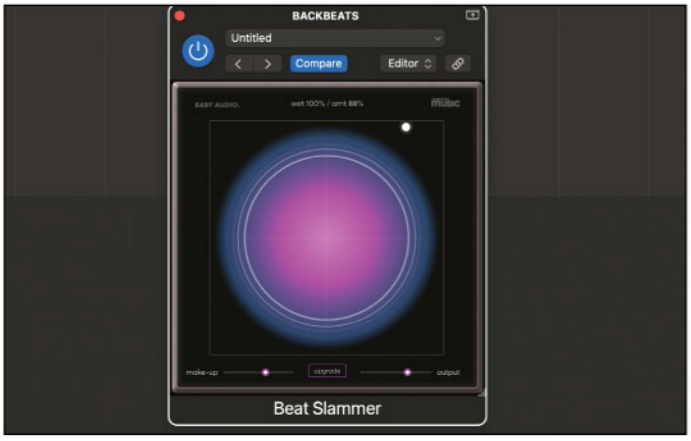


6 > The circle display also indicates gain reduction and this appears as dynamic white circles. As the gain reduction increases, the circles get smaller and nearer the middle. It's also important to say that this measures the overall gain reduction, and is thus influenced by the mix blend. Try different settings to see how they look.

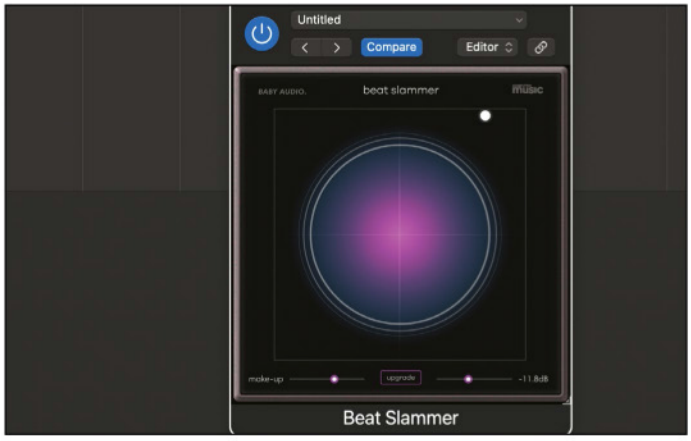
> Step by step 4. Backbeats



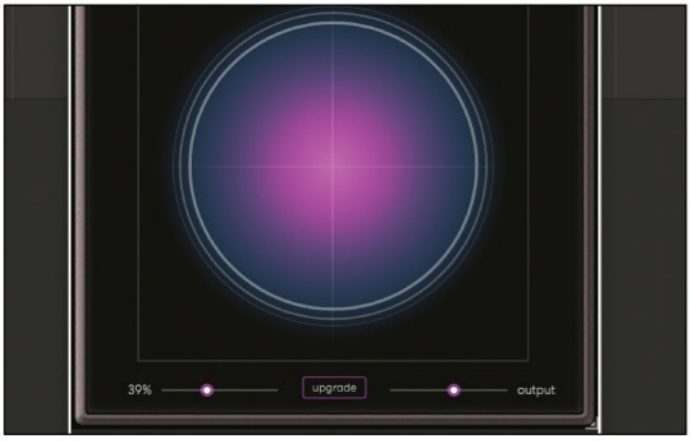
1 > As its name implies, Beat Slammer is designed to add control and flavour to beats and drums, using parallel processing to achieve the ideal balance. So let's look at what kind of effects we can achieve. In this walkthrough we'll try out backbeats: snares, rims and so on.



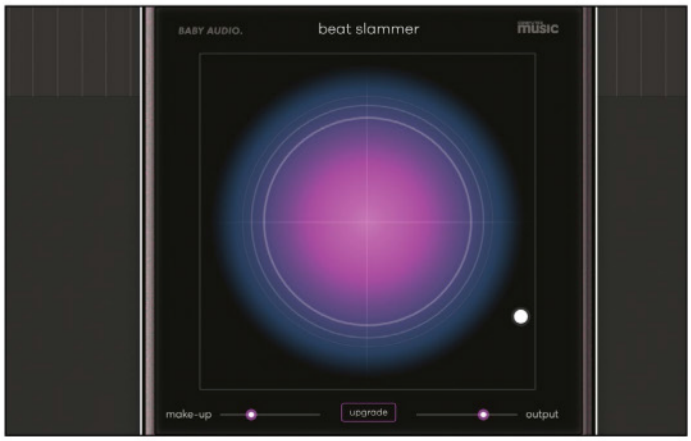
2 > We've set our amount to about 85% and this really brings out the snare sound in the tail and makes the attack more punchy. Beat Slammer's auto gain make up has increased the level considerably and so we've also cut the output gain to compensate (about -12dB). The overall sound has much more presence.



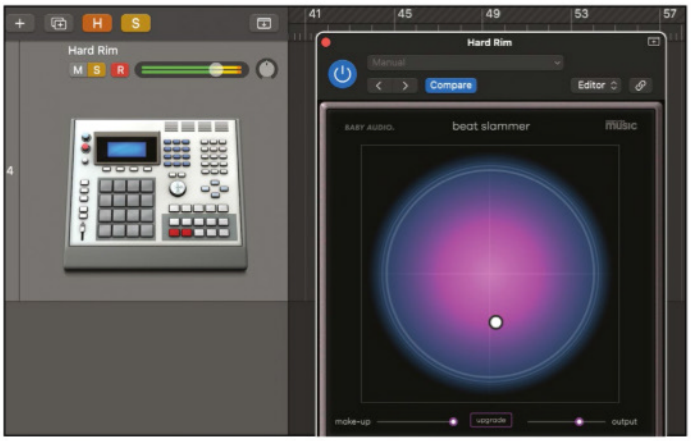
3 > Let's start with a vintage snare: the 808. Much as we love this papery-sounding classic, it can lack punch and presence and sometimes needs a helping hand to cut through in the mix. Beat Slammer is ideal for this. Starting with wet/dry mix at maximum (top) slide from left to right to gradually increase the processing.



4 > Before we move on to another sound, let's also look at the auto gain make-up control. This smart control actually employs an algorithmic approach that attempts to match the wet and dry signals. In practice it feels like you're adjusting how aggressive the gain make-up is. Try different settings to see how much it changes the sound.

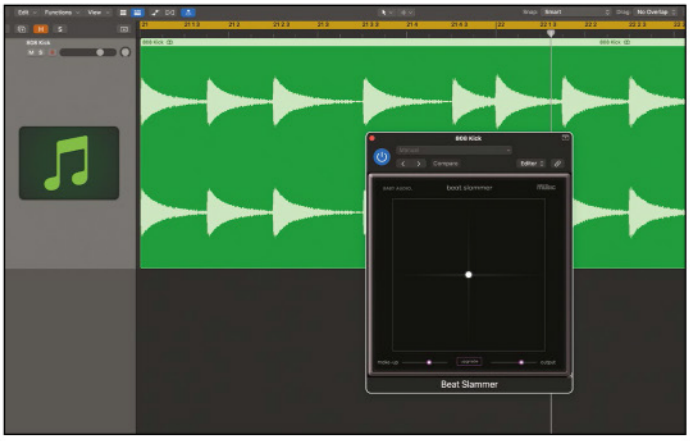


5 > Now let's look at a regular drum kit snare. The original sound is ringy and a bit weedy. To start we'll set the processing amount almost at its maximum, but blend the mix quite low. Our settings are 20% wet and 100% amount. We've then reduced the make-up (30%). The result is a much more snappy snare.

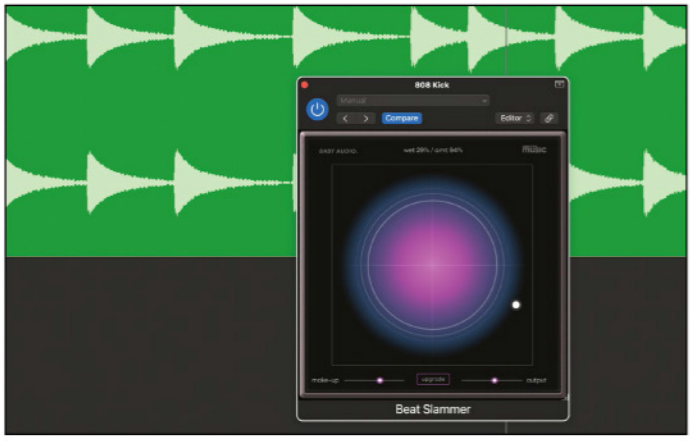


6 > Finally let's try to create a shorter, harder rim snare. Here we've gone for a lower amount setting and moderate mix blend (30% wet, 52% amount). But we've also ramped the make-up right up to the maximum 100%. The result is a short but even harder-sounding rim with more edge.

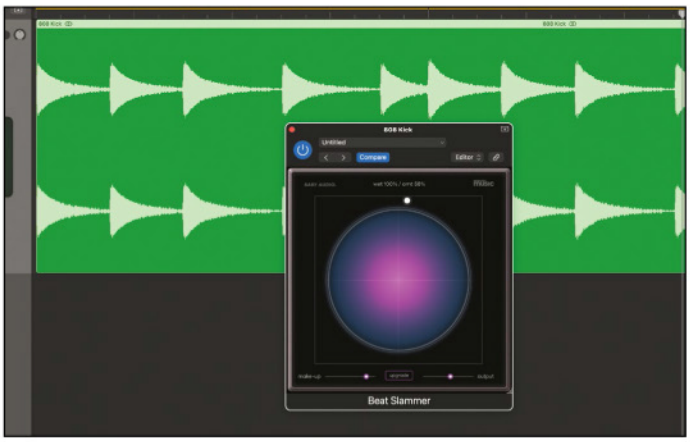
> Step by step 5. Kicks



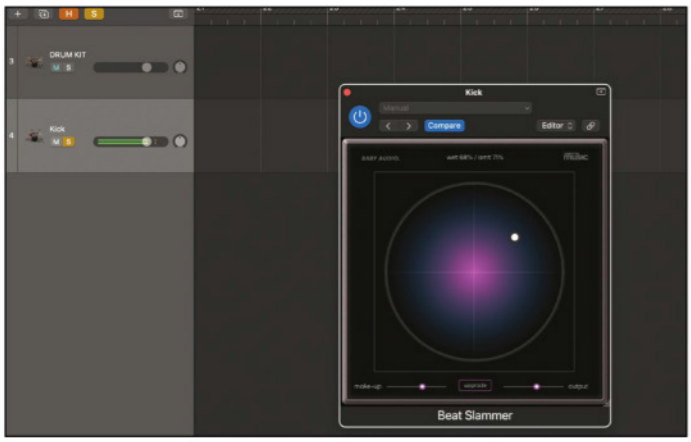
1 > Kicks can benefit from compression but behave quite differently to snares, with the low frequencies usually driving the compression. Once again we're starting with the 808, as the kick often needs help cutting through, and compression can help you out with that. We've loaded up a regular 808 sound and pattern, inserting an instance of Beat Slammer.



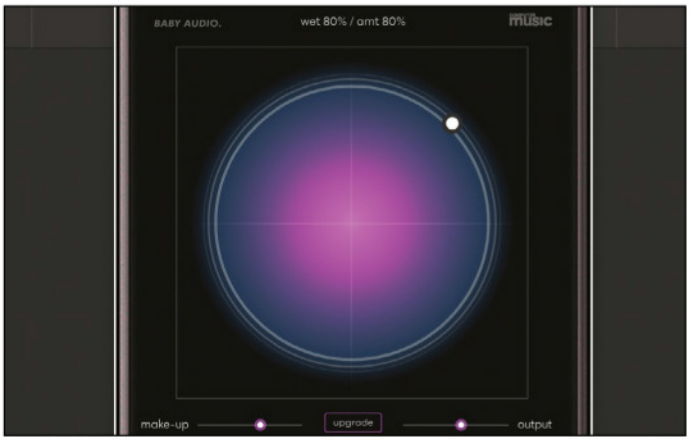
2 > Parallel compression provides a great way to create harmonics and add presence to 808 kicks. Here we've set the amount quite high (94%) to create a buzzy distorted effect, but then used the parallel mix (29%) to blend to taste. Once again we like the sound, so have simply reduced the output level accordingly (-6dB).



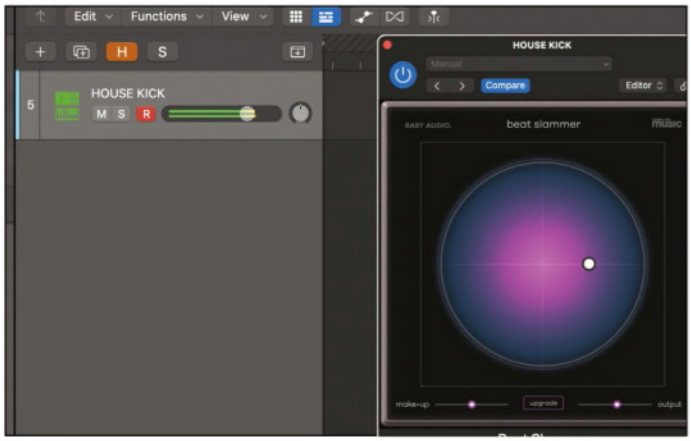
3 > This isn't the only way we can process an 808 kick. In our second example, we've set the amount to medium (56%) but the blend to maximum 100%. We've then modified the make-up to taste (83%). There is less gain reduction and the compression is more subtle but the result is a tighter, punchier 808 kick.



4 > Now let's try a drum kit kick. Our starting kick has a quite prominent low-mid knocky sound which makes the kick sound a bit light. We've loaded up an instance of Beat Slammer and this time starting with the cursor in the middle, we're simply going to move it diagonally towards the top right corner.

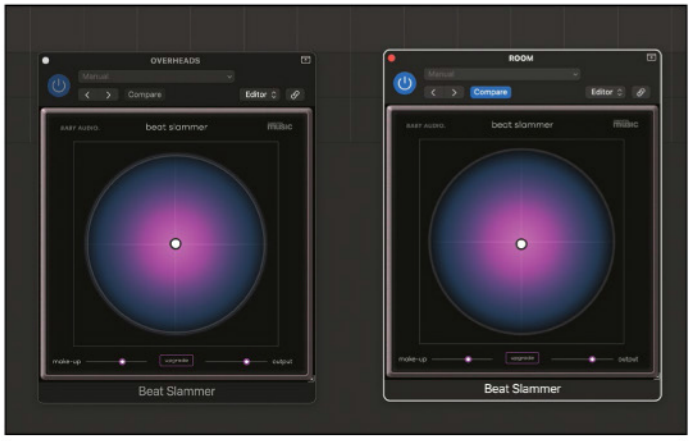


5 > As we do this, we're increasing both the amount and wet mix collectively. This moves us through various types of processing until, at the maximum setting, in the top right hand corner, we have an over-processed boomy ringy kick. Try finding your own sweet spots: here ours is at 80% wet and 80% amount.

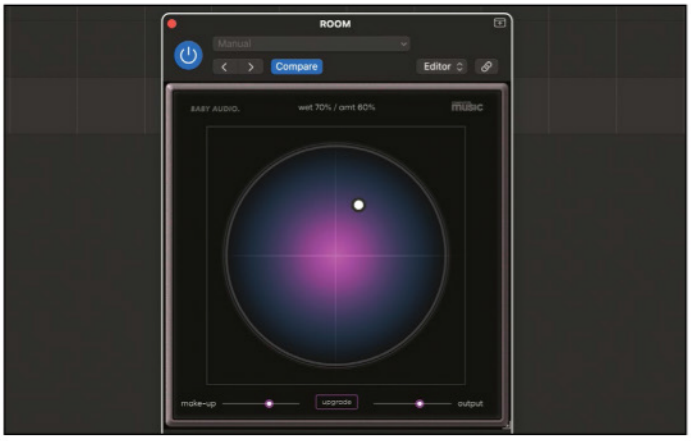


6 > For our final kick, we have a production-ready house kick that already sounds very good. Even so, we can reshape it using Beat Slammer. Here we've set the amount at a reasonable 70% and the mix blend at 50%. We've then adjusted the make-up (50%). The gain reduction is modest, but overall the kick sound is far punchier.

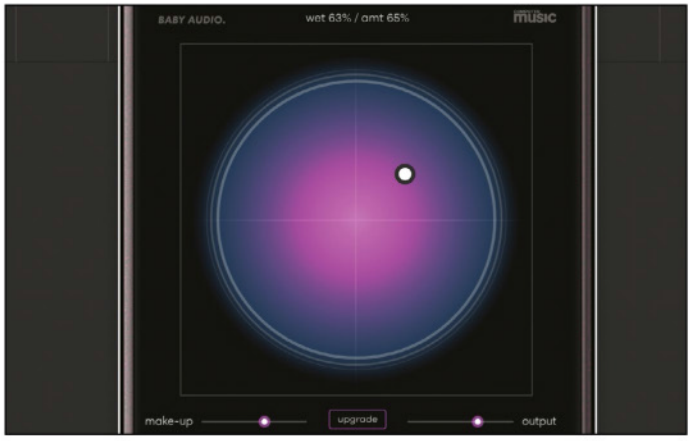
> Step by step 6. Spreading the net



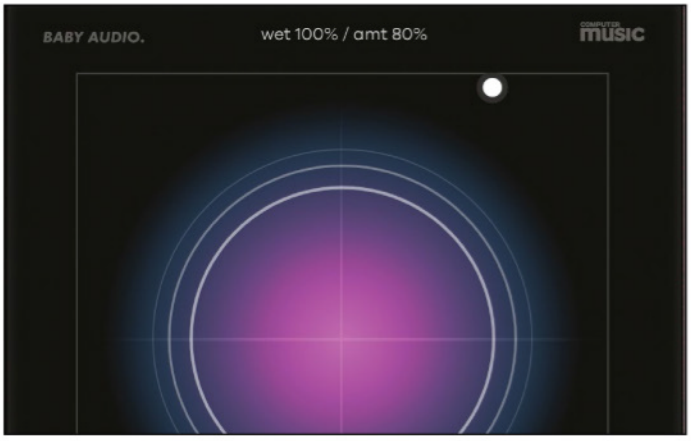
1 > Beat Slammer is great for treating ambiences and room sounds, particularly those that come with live drum kits. Here we've loaded up a full drum kit part and solo'd the stereo overhead and room mics, loading an instance Beat Slammer on each to see what we can achieve.



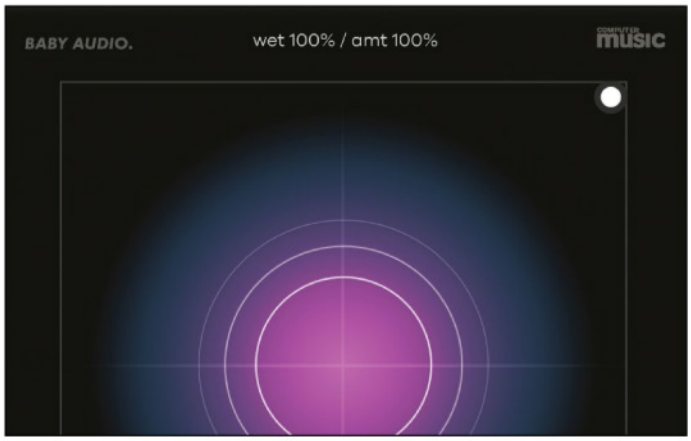
2 > Let's start with the room mics. Our sound is a medium room and the kit is quite dull-sounding with low-mid frequency muddiness. Even so, we can modify this using Beat Slammer. With the amount at about 70% and mix blend at 60%, the kick and snare have more presence and the kits sound more balanced.



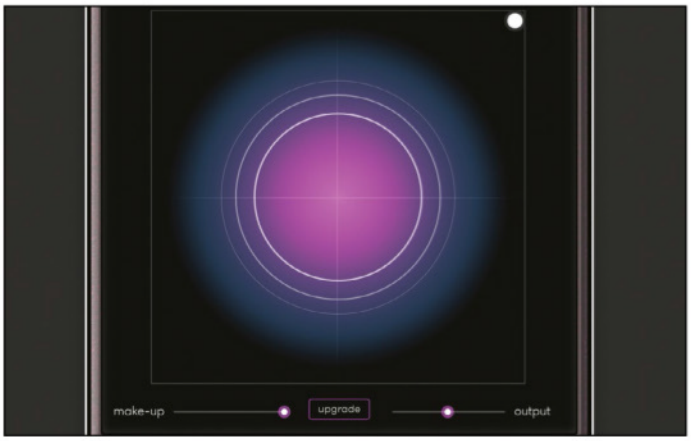
3 > For the overheads, as is often the case, the sound is dominated by the kick and snare. However, by using Beat Slammer we can rework this slightly and bring up the background room sound. Here we've gone for quite modest settings (wet 63% amount 65%), but this is enough to even out the sound.



4 > To finish up, and as a nod to its name, we're going to put the plugin's money where its mouth is and slam some beats. We have a drum and bass loop at 172bpm that's crisp and clean, but we want to know how dirty we can make it. With the amount at about 80% and mix at 100% it sounds more lively, but not overprocessed.



5 > Once we get beyond the 80% mark, things start to pump and at the fully maximum XY settings we have a dirty pumping loop. However, there's still room to ratchet things up more by increasing the make-up control and cutting the output accordingly for a full-on 100% settings effect.



6 > Why not try this full 100% 'slamming' setting on other sounds to see how it works. Remember to cut the output level otherwise the make-up circuit will make the signal very loud. We've returned to our drum kit overheads to create a dirty pumping effect.

Download all assets for this issue at **bit.ly/cm327downloads**

Techno and Horror

This month we're boosting our techno trip and giving ourselves the creeps with our exclusive horror-themed pack! Download from **bit.ly/cm327downloads**

Classic Techno

To accompany our feature, we asked Oli from Groove Criminals to ressurect techno's year zero. Over to him...

"We've been influenced by the classic techno sounds of Detroit and Berlin this month and lent towards the more rhythmic elements. Beats-wise, we gave the RD-9 a good run out including using the individual outputs to process different drum sounds through various effects.

"Our faithful TR-8 has the 707/727 expansion so we also included some beats based around those sounds to reflect those machines' influence in early techno. We've included plenty of drum hits to let you build your own beats and some tasty percussive synth loops to layer up.

"Synth-wise, we've leaned into some FM tones for that metallic edge using both Dexed and the Volca FM and also rinsed the Arturia Prophet emulation for some bass action."

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SELECTED GEAR

Behringer RD-9
Roland TR-8 (fully-expanded)
JoMox Airbase 99
Volca FM
Alchemy
NI Massive
Arturia Prophet v3
Dexed
Various delay, chorus, flange and reverb plugins
Hungry Robot Wardenclyffe
Old Blood Noise Minim
Demedash T-120 delay

Horror and Tension

Prepare for the looming Halloween with some chilling sounds, spookily spawned by the ghoulish Robbie Stamp...

"Creepy chorals, eerie ensembles, tense pianos and discordant synths – it's horror soundtrack time! Four tempo folders of loops contain 18 instruments, sculpted to range from discomforting to distorted malevolence. The loops have been created in key-related triplets or quads so there are layers ready to drop together. Though the loops are tempo-based, many will work when run as looped in different tempos as they don't have such pronounced transients or progressions/modulations that they'd sound out of time. The Chords folder contains four chord hits from 13 (!) of the instruments used. On the production side it is worth noting that the use of distortion, harmonizers, heavily EQ'd reverbs and (ring) modulation can render even the most chirpy of sources into Freddy Krueger with just a few (virtual) knob twists."

Visit: bit.ly/cm327downloads

SELECTED GEAR

Arturia V Collection
UVI Workstation
Soundtoys plugins
Eventide plugins
iZotope Ozone 8 plugins
Moog Moogerfooger plugins
Cableguys ShaperBox 3
FabFilter Volcano 3 plugin
Valhalla SpaceModulator & Supermassive plugins
Arturia Mello-Fi plugin
PSP BussPressor and Vintage Warmer plugins

FROM THE cm VAULT

Classic samples
Scandi Noir

Not too far back, Robbie at Cyclick took a trip to the icy fields of Scandinavia to bring a slew of drama-laden samples...

Noir Music

"These two sample packs have been created to conjure the tense, brooding soundscapes of the modern noir, as perfected by the many series produced in Scandinavia. The raw winds, icy cold and melancholic rain were, somewhat painfully, kept in mind as the musical and atmospheric samples were created."

On Noir Music, Robbie says: "Pianos, guitars, a Mellotron, a splash of synths and a smattering of drums make up the looped lines folder which spans across four tempos. The A-D suffixes indicate lines that were created together. Some of the drum hits were sampled off as beats were made, while the Mellotron, guitars and pianos were put to use to make a set of one-shot chord hits, which have the chord names in their filenames for the curious..."

For more information on this collection, read Robbie's original PDF

Noir Atmosphere

Turning his attention to his second Noir pack, Robbie adds the following details...

"Strings, pianos and a Mellotron (the Arturia one) were put to good/bad use with tons of reverb, compression (to keep things level) and various other flavours (definitely the Eventide H949) to put together a set of eery, haunting and often quite nasty loops and string one shots to summon up those wintry northern European atmospherics. Note: the loops in this section are made to be seamless so the start and end points may clip if played as a one shot, so just add a fade in/out to the first/last instance or use a little attack/release if dropped into a sampler."

For more information on this collection, read Robbie's original PDF

SELECTED GEAR USED FOR BOTH

SOFTWARE

Arturia V Collection
Steinberg Nuendo 11
UAD plugins
Eventide plugins
Soundtoys plugins
iZotope N2/O8 and Neoverb plugins
IK Multimedia Amplitube 5
NI Kontakt 5
LiquidSonics Seventh Heaven Pro
FabFilter Volcano 3 and Timeless 3

GUITARS

Gretsch Electromatic G5122
Squier Jazzmaster Vintage Modified
Musicman Stingray bass (1977)
Danelectro Dano '63 baritone
Focusrite ISA 828 preamps

Download all assets for this issue at **bit.ly/cm327downloads**

Loopmasters

Loopmasters **cm**327 samples

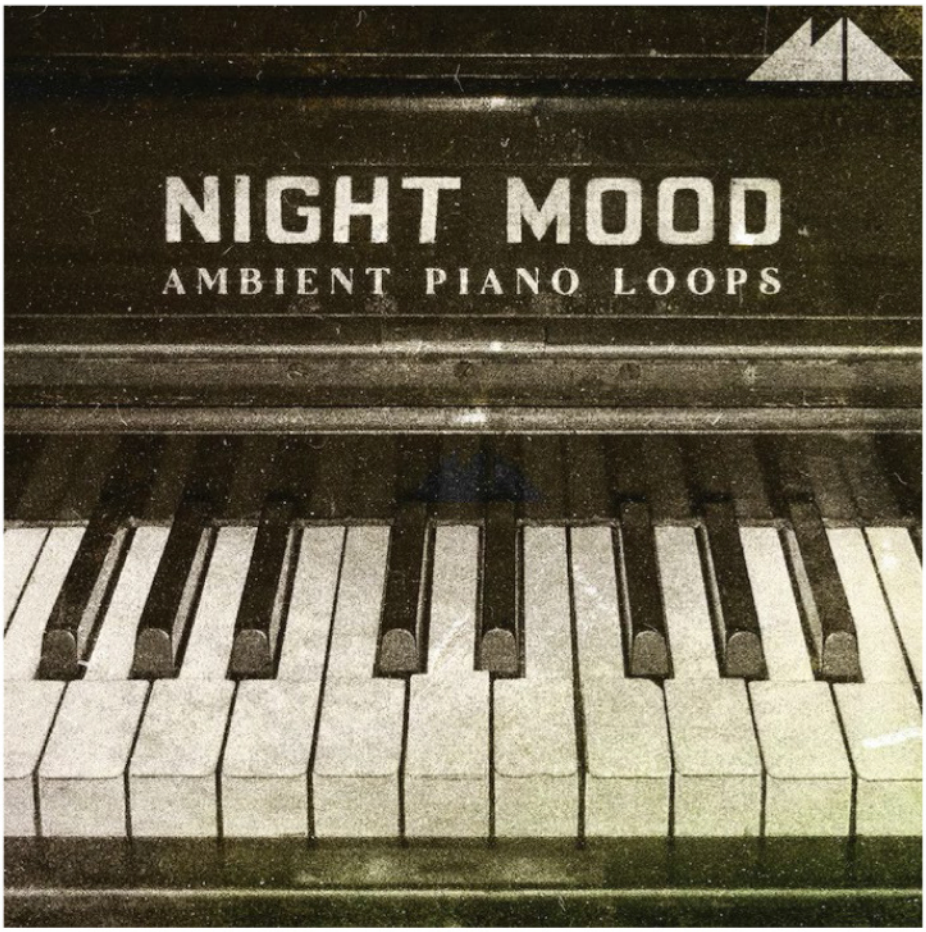
This month's demo sample selection highlighting Loopmasters' latest releases

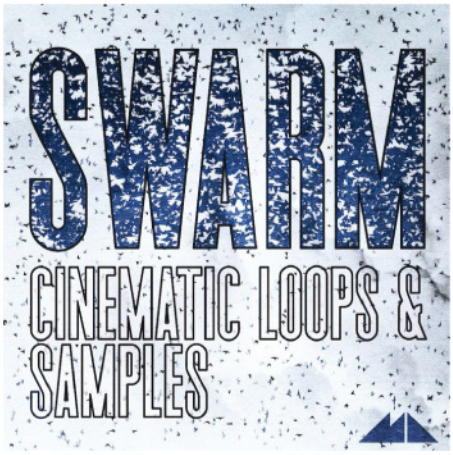
01 **Blind Audio** Low Fidelity Drum & Bass
02 **Soundbox** Solid Tech House
03 **Freakyloops** Solaris II Cinematic Atmospheres
04 **Loopmasters** Soul Funk Deep House
05 **Singomakers** New Era Melodic Techno
06 **Samplestate** Solid Tech Grooves Vol. 2

MODE AUDIO

ModeAudio cm327 samples

Guest samplists ModeAudio have provided another showcase of their fabulous releases this issue, including Diffusion, Night Mood, Swarm and much more. For details on each pack, see the folder within the downloads section.





MUSIC PRODUCER'S GUIDE TO LOGIC PRO

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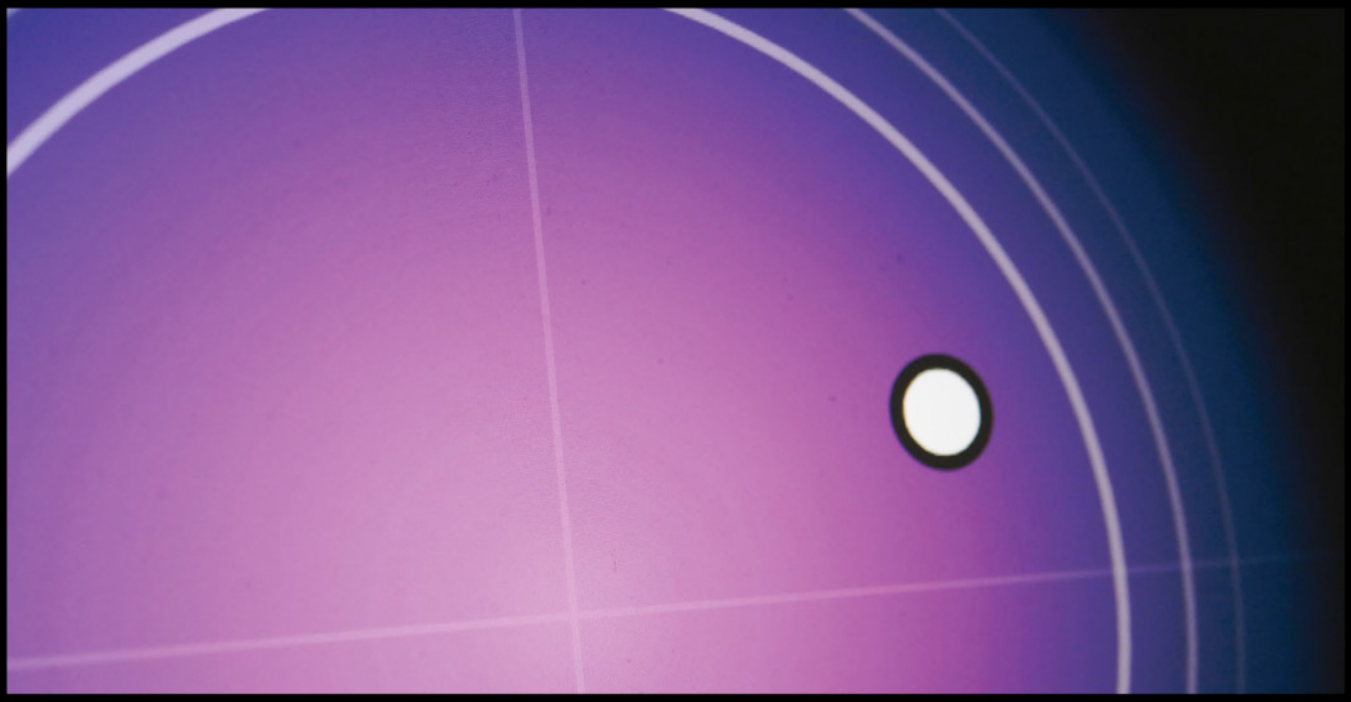
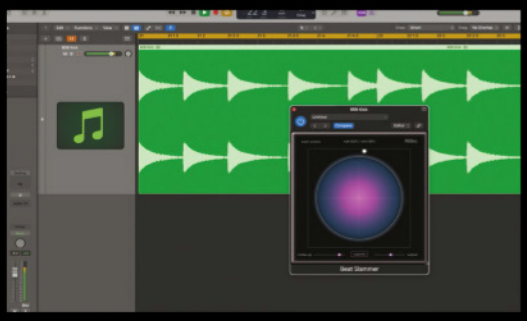
Download this month's videos: **bit.ly/cm327downloads**



BABY AUDIO BEAT SLAMMER

We've got an all-new plugin for slamming beats this month, our video shows you how it works

Read the full article from p82



cm/experts

Our resident music production gurus walk you through their specialist field every month

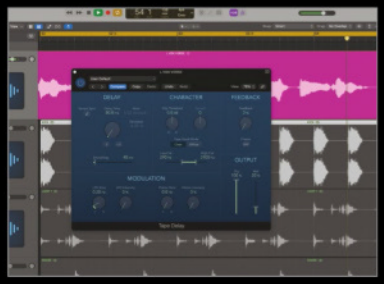
SYNTH MASTERCLASS

MODERN TAPE STRINGS

Read the full article on p42

MIX MASTERCLASS

USING SHORT DELAYS



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Autumn 2023

- Make Better Beats guide
- **FREE Lunacy Audio Cube Mini plugin**
- **FREE Best Of 2023 samples set**
- Beatie Wolfe and Jessy Lanza interview

ISSUE 325
October 2023

- Mastering in the box
- **FREE Caelum Audio Choric Quartet plugin (Excite Audio plugin no longer in stock)**
- **FREE guitar and drone samples**

ISSUE 324
September 2023

- Get Classic Studio Sounds feature
- **FREE plugin from Acustica Audio**
- **FREE lo-fi samples**
- Django Django interview
- iPad Logic guide

ISSUE 323
August 2023

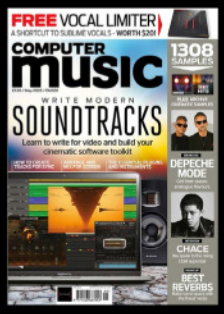
- New game changers for your workflow
- **FREE Bitwig 8-Track**
- **1041 FREE samples**
- Nathan Fake interview
- Mastering wavetable synthesis guide

ISSUE 322
July 2023

- Arrange tracks like a Pro
- **FREE Modalics EON arpeggiator**
- **1052 FREE samples**
- Manon Grandjean interview
- Gorillaz-style strings

ISSUE 321
June 2023

- Build Your All-New Free Studio
- **FREE Halo 2 Lite synth**
- **1597 FREE samples**
- Inside an immersive audio compilation
- Gryffin interview



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May 2023

- Write Modern Soundtracks guide
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- **1308 free samples**
- Depeche Mode synth masterclass
- Chace interview

ISSUE 319
April 2023

- Make a Track Today – with free DAW and softsynth worth $79
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- **Bumper MIDI controller buyer's guide**
- **Cosmicat interview**

ISSUE 318
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- Total Control! The latest in controller tech – and an interview with expressive control king Atau Tanaka
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February 2023

- Get Dynamic! Compression demystified
- **Bumper pack of 2022's best CM plugin offers and samples - for FREE**
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December 2022

- Extreme FX: boost your creativity and perfect your sound
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- 2750 FREE Samples
- Deadmau5 interview

MORE BACK ISSUES AVAILABLE

*Free software offers may be subject to expiry after 6 months – check individual entries

Next issue

ON SALE WED 1ST NOV

Make AI work for you to improve your mixes

Next month we go against the doomsayers and emphasise how the new generation of AI-based plugins and software can aid you to become a better producer and enhance your mixes. Instead of replacing humanity, this is how to make AI work for you!

PLUS!

INFEKT
The dubstep devil on his love of Bitwig and crafting drops

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